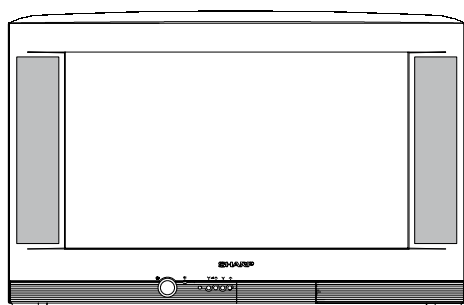


SHARP®**SERVICE MANUAL**

SE0032JW73E01

Issued: 20th Dec. 2002**GA-20 CHASSIS**

PAL B/G, I / SECAM L/L', B/G, D/K SYSTEM COLOUR TELEVISION


MODEL
32JW-73E_{ES/SE}

In the interests of user safety (required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.

SERVICE MANUAL UPDATE LOG SHEET

[illegible]

Use this page to keep any special servicing information as Technical Report (Bulletin), Technical Information, etc.
If only part number changes are required, just change part number directly the part number in the Parts Listing Section.
If you need more information, please refer to the Technical Report (Bulletin).

ELECTRICAL SPECIFICATIONS

- Power Input 220V-240 Volts AC 50Hz
- Power Consumption
 - Normal Operation (Method IEC60107) 85W
 - Stand-by Operation 3W
- Audio Power Output Rating (MPO) / Impedance
 - Internal Left Speaker 10W, 7Ω
 - Internal Right Speaker 10W, 7Ω
- Speakers
 - Left / Right 12 x 6cm
- Convergence (Maximum Misconvergence)
 - Static (Centre) between any two colours ... 0.08 cm
 - Dynamic after static equals zero
 - Within 10cm (4") circle 0.12cm
 - 10-25cm (4-10") circle 0.20 cm
 - Everywhere else 0.28 cm
- Focus High Bi-Potential Electrostatic
- Sweep Deflection Magnetic
- Picture Intermediate frequency
 - L' 33.9MHz
 - L, B/G, D/K, I 38.9MHz
- Sound Carrier Trap
 - L' 40.4MHz
 - L, D/K 32.4MHz
 - B/G 33.4MHz
 - I 32.9MHz
- Adjacent Sound Carrier Trap
 - L' 32.4MHz
 - L, D/K, B/G 40.4MHz
 - I 40.9MHz
- Adjacent Picture Carrier Trap
 - L' 41.9MHz
 - L, D/K, ... 30.9MHz
 - B/G 31.9MHz
- Aerial Input Impedance
 - VHF/UHF 75 ohm Unbalanced
- Tuning Ranges 45.75MHz thru 855.25 MHz
 - VHF: IR A - J / S1 - S41 CH (Hiperband)
 - UHF: I21 - I69 CH
 - CATV Special Channels
- White Level
 - Set brightness control to get total picture tube cathode current of 600 μA under no signal condition.
 - Maximum necessary correction of each picture tube cathode current to get 8550 degrees K+1 MPCD screen temperature should not exceed 15% of its original value.

$$X=0.290 \pm 0.015 \quad Y=0.300 \pm 0.015$$

Specifications are subject to change without prior notice.

MODEL DESTINATION (Operation Manual languages).

32JW-73E: Deutsch, Français, Nederlands.
32JW-73EES: Español, Português.
32JW-73ESE: Dansk, English, Norsk, Suomi, Svenska.

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
 To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

IMPORTANT SERVICING NOTES

Only qualified service personnel are allowed to carry out maintenance and repair of this receiver.

Servicing of High Voltage System and CRT

It is important that the static charge is removed from the high voltage system when carrying out work on the receiver. This can be achieved by connecting a 10K resistor (with a suitably insulated lead) from the CRT cavity connector to the CRT ground tag. This must be carried out with the AC supply disconnected from the receiver.

Note the following:

- The CRT in this receiver employs Integral Implosion Protection.
- If the CRT has to be changed it **MUST** be replaced with the correct type for continued safe working.
- **DO NOT** lift the CRT by its neck.
- When handling the CRT, ensure that shatterproof goggles are worn.
- Ensure that the CRT is discharge before handling.

X-Ray

This receiver is designed to keep any x-ray emission to an absolute minimum. Some fault conditions and servicing procedures may produce potentially hazardous x-ray radiation levels. This is a problem when in close proximity to the receiver for long periods of time. To reduce any risks associated with this, please observe the following precautions:

1. When undertaking any servicing on this chassis, **DO NOT** increase the EHT to more than 32.5 KV, (at a instantaneous beam current of 1500 μ A).
2. Ensure that during normal operation the EHT does not exceed 30.0 KV $\pm$ 1.5KV (at a beam current of 1650 μ A). This level has been preset in the factory. Always check that this level has not been exceeded after carrying out any repair on the receiver.
3. **DO NOT** replace the CRT with any other type than that specified in the parts listing as this may cause excessive x-ray radiation.

Before returning the receiver to the customer

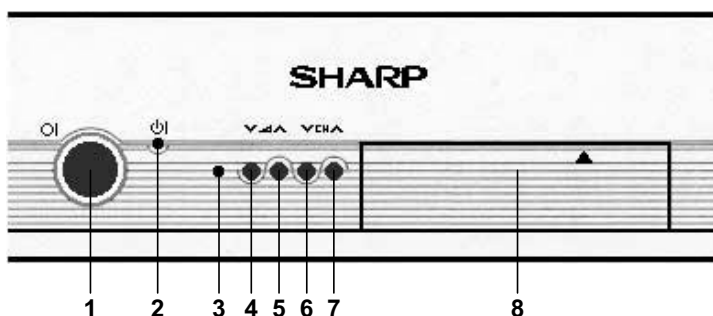
In addition to the above checks, the following should also be carried out before returning the receiver to the customer.

1. Inspect all the leads to ensure that they are dressed correctly and that they are not obstructed or pinched by any other parts.
2. Ensure that all protective devices are in good condition. These will include nonmetallic control knobs, insulating fish papers, cabinets backs, compartment covers or shields, mechanical insulators, etc.

CONTROLS & TERMINALS

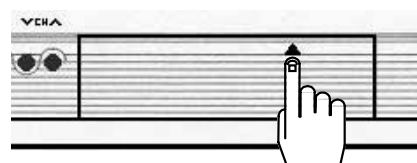
FRONT TV

1. Main power button
2. Power indicator
3. Remote control sensor
4. Volume DOWN button
5. Volume UP button
6. Channel DOWN button
7. Channel UP button
8. Door



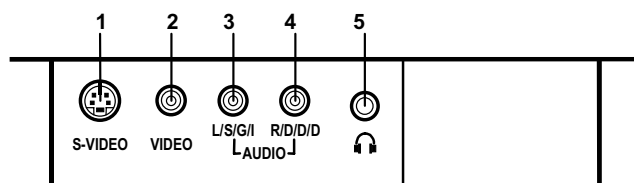
HOW TO OPEN THE DOOR

Press the top of the door, opening it slightly hook your finger inside and pull open.



Behind the door

1. S-VIDEO input terminal
2. VIDEO input terminal (PAL/SECAM/NTSC)
3. AUDIO input terminal (left)
4. AUDIO input terminal (right)
5. Headphone jack (3.5mm / 16~600 ohms)



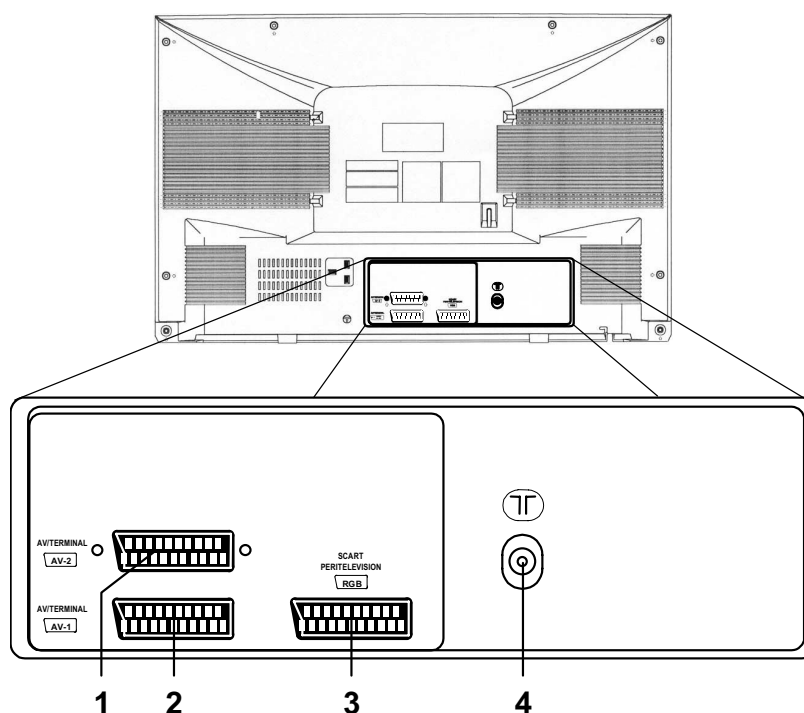
REAR TV

21-pin In/Out

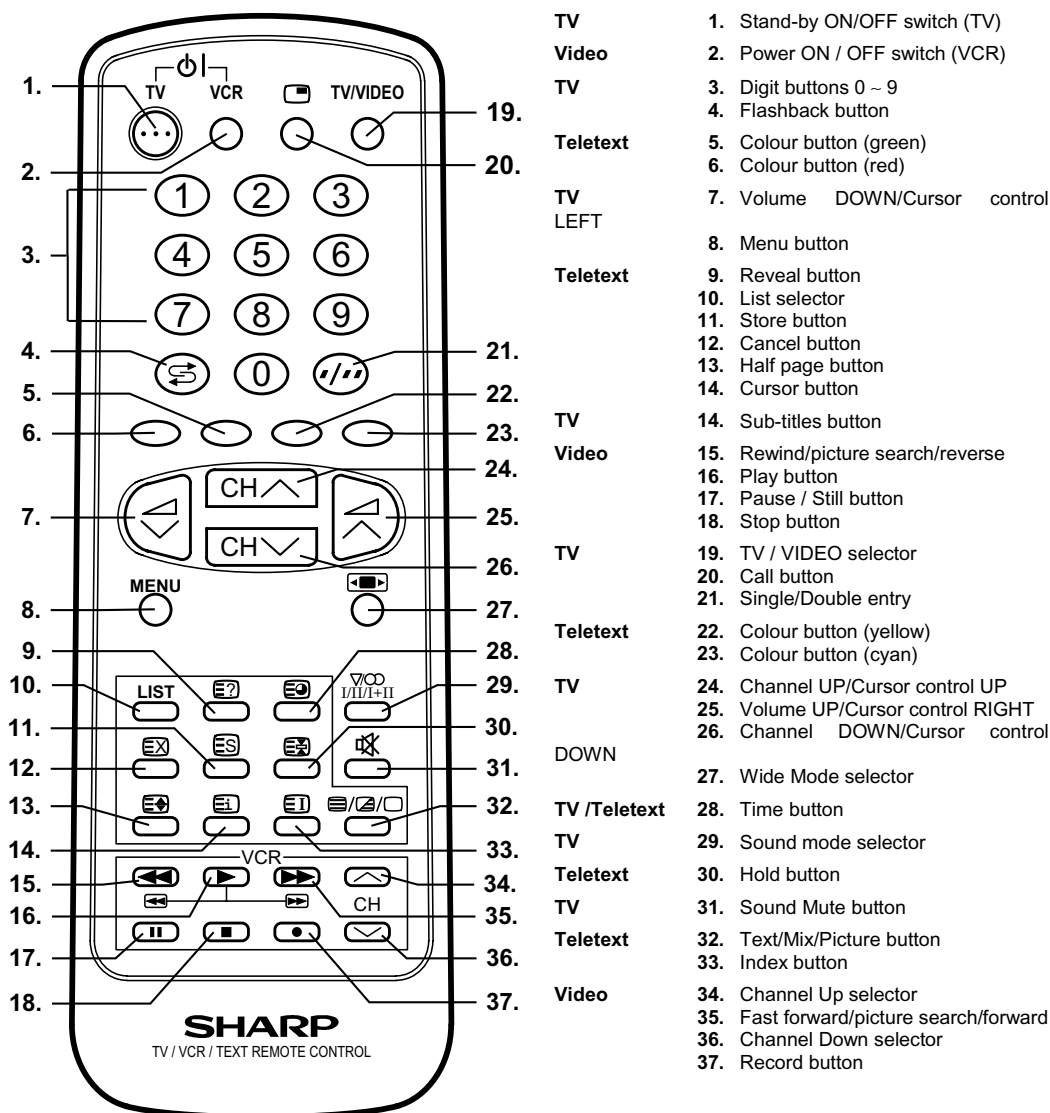
1. 21-pin Audio/Video (AV-2)
With PAL/SECAM/NTSC Video Input
2. 21-pin Audio/Video (AV-1)
With PAL/SECAM/NTSC/S-Video Input
3. 21-pin Euro SCART (RGB)
With PAL/SECAM/NTSC Video Input

RF Input

4. Aerial terminal



REMOTE CONTROL



ADJUSTMENT PROCEDURES

All adjustments to this chassis, except for focus, are carried out in the Service Mode.

Service Mode

The Service Mode is provided to enable the engineer to correctly set up the receiver to the CRT fitted in the set. Note that these adjustments may vary from one receiver to another.

To enter the Service Mode, carry out the following procedure.

1. Connect a test pattern to the antenna terminal.
2. Tune the receiver to this signal.
3. Turn the receiver off using the mains switch.
4. Press volume down and channel up buttons on the front of the receiver at the same time.
5. Keeping these buttons pressed, turn the mains on.
6. When the set starts up it will be in Service Mode.
7. Release the two buttons.

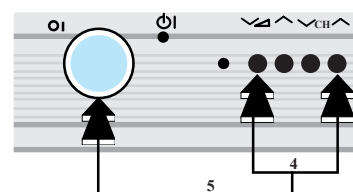


Figure 1

- Use the channel up and down buttons to move between the options.
- Use the volume control buttons to change the data.
- To store the data, use the stand-by button on the remote control.
- To exit the Service Mode, turn the receiver off using the mains switch.

When the Service Mode is entered the following On Screen Display appears

SERVICE SOFTWARE **--**x**
SW on: XXXX SW off: XXXX Hours ON: XXXX

The figures displayed in the "XXXX" locations are hexadecimal representations of the number of times that particular function has been executed. For example if the hexadecimal number displayed after "SW on" was 0E4A, this would correspond to the receiver being turned on 3658 times.

The figure displayed in the " **--**x** " location is the EPROM version.

Adjustment menu:

The following adjustments can be carried out in the Service Mode.

- | | | |
|----------------------------------|---------------------------------------|--|
| 01. Horizontal Shift | 11. S Correction | 21. Alter NVM Val (<i>Value</i>) |
| 02. East West Width | 12. Vertical Shift | 22. Teletext Mix Mode Contrast |
| 03. Pin Phase | 13. Red Gain | 23. Teletext Contrast |
| 04. Pin Amp (<i>Amplitude</i>) | 14. Green Gain | 24. OSD Contrast |
| 05. Corner Amplitude | 15. Blue Gain | 25. DVCO Adjustment (Only PAL) |
| 06. Corner Symmetry | 16. Red Cut Off | 26. DVCO Adjustment (Only NTSC) |
| 07. Vertical Linearity | 17. Green Cut Off | 27. AGC Adjustment (<i>B/G or L depending on the receiving signal</i>) |
| 08. Vertical Angle | 18. Blue Cut Off | 28. Auto Installation On/Off |
| 09. Vertical Bow | 19. Alter NVM Pag (<i>Page</i>) | |
| 10. Vertical Amplitude | 20. Alter NVM Pos (<i>Position</i>) | |

When in the Service Mode it is possible to access certain functions by using the teletext keys as below.

- By pressing the **Blue** button each adjustment can be directly accessed via the remote control. Referring to the list above, press the **Blue** button followed by the adjustment number, this will directly access the selected adjustment. If any number above 29 is selected, the set will revert to the Service Mode entry page. To access a number less than 10, use the 0 key first, i.e. 02.
- Press the **Yellow** button to go straight to the AGC adjustment.
- Press the **Green** button once to enter "FACTORY VOLUME" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the **Green** button twice to enter "FACTORY BALANCE" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the **Green** button three times to enter "FACTORY BASS" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the **Green** button four times to enter "FACTORY TREBLE" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the **Red** button once to enter "FACTORY CONTRAST" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- Press the **Red** button twice to enter "FACTORY BRIGHTNESS" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- Press the **Red** button three times to enter "FACTORY COLOUR" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- If buttons 0 through 9 are pressed, the set will automatically go to that program number.
- By pressing the Menu button, the unit will normalise Picture and Audio settings. The Auto Installation is then turned "on".

Note that the receiver should be set to FULL MODE before carrying out any geometry adjustments. This can be achieved by pressing the widescreen mode button on the remote control until FULL MODE appears on the OSD. This can only be done out of the Service Mode.

The following geometry adjustments can be carried out. Detailed instructions on how to execute these are given on the following pages.

Horizontal

- Horizontal Shift
- E-W Width
- Pin Phase
- Pin Amp
- Corner Amplitude
- Corner Symmetry

Vertical

- Vertical Amplitude
- Vertical Shift
- Vertical Bow
- Vertical Angle
- S Correction
- Vertical Linearity

Just in case the TV set requires a full geometry adjustment, please proceed first with Vertical according to the above order, and after that, adjust Horizontal according to the above order.

Horizontal Shift

Adjust the Horizontal Shift so that the picture is centred.

The effect of this adjustment is shown in figure 2.

- When the volume up button is pressed, the picture moves to the right.
- When the volume down button is pressed, the picture moves to the left.
- Press the stand-by button on the remote control to store.

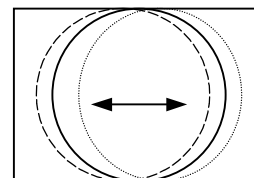


Figure 2

E-W Width

Adjust the E-W Width so that 8% over-scan is achieved.

The effect of this adjustment is shown in figure 3.

- When the volume up button is pressed, horizontal scanning decreases.
- When the volume down button is pressed, horizontal scanning increases.
- Press the stand-by button on the remote control to store.

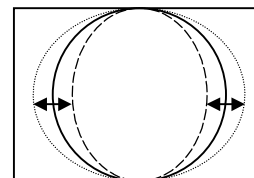


Figure 3

Pin Phase

Adjust the Pin Phase so that the picture is symmetrical top and bottom.

The effect of this adjustment is shown in figure 4.

- When the volume up button is pressed, side pincushion changes.
- When the volume down button is pressed, side pincushion changes.
- Press the stand-by button on the remote control to store.

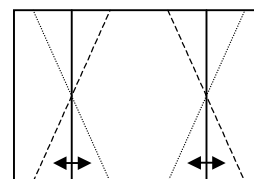


Figure 4

Pin Amp

Adjust the Pin Amp so that the picture is centred.

The effect of this adjustment is shown in figure 5.

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

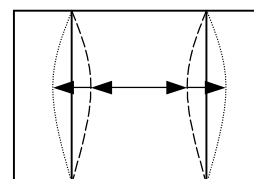


Figure 5

Corner Amplitude

Adjust the Corner Amplitude so that the picture is centred.

The effect of this adjustment is shown in figure 6.

Note: This adjustment affects to upper and lower sides.

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

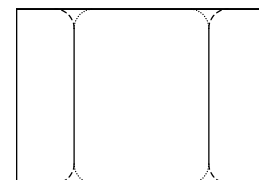


Figure 6

Corner Symmetry

Adjust the Corner Symmetry so that the picture is centred.

The effect of this adjustment is shown in figure 7.

Note: This adjustment affects to upper and lower sides.

- When the volume up button is pressed, side pincushion changes from barrel shape to pincushion.
- When the volume down button is pressed, side pincushion changes from pincushion to barrel shape.
- Press the stand-by button on the remote control to store.

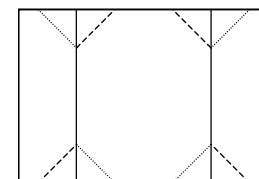


Figure 7

Vertical Linearity

Adjust the Vertical Linearity so that the upper and lower parts of the picture are symmetrical.

The effect of this adjustment is shown in figure 8.

- When the volume up button is pressed, the upper picture scanning decreases and the lower picture scanning increases.
- When the volume down button is pressed, the upper picture scanning increases and the lower picture scanning decreases.
- Press the stand-by button on the remote control to store.

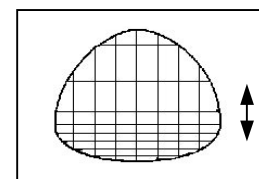


Figure 8

Vertical Angle

Adjust the Vertical Angle so that the picture is centred.

The effect of this adjustment is shown in figure 9.

- When the volume up button is pressed, the vertical angle changes to right.
- When the volume down button is pressed, the vertical angle changes to left.
- Press the stand-by button on the remote control to store.

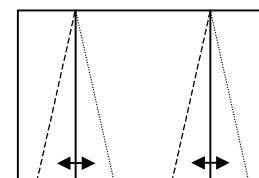


Figure 9

Vertical Bow

Adjust the Vertical Bow so that the picture is centred.

The effect of this adjustment is shown in figure 10.

- When the volume up button is pressed, the vertical bow changes to right.
- When the volume down button is pressed, the vertical bow changes to left.
- Press the stand-by button on the remote control to store.

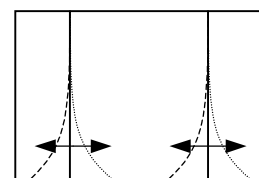


Figure 10

Vertical Amplitude

Adjust the Vertical Amplitude so that 8% over-scan is achieved.

The effect of this adjustment is shown in figure 11.

- When the volume up button is pressed, the vertical size of the picture increases.
- When the volume down button is pressed, the vertical size of the picture decreases.
- Press the stand-by button on the remote control to store.

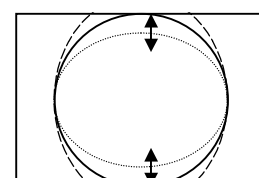


Figure 11

S Correction

Adjust the S Correction so that the picture symmetrical between the top, centre and bottom. The effect of this adjustment is shown in figure 12.

- When the volume up button is pressed, the top and bottom scanning increases and the centre scanning decreases.
- When the volume down button is pressed the top and bottom scanning decreases and the centre scanning increases.
- Press the stand-by button on the remote control to store.

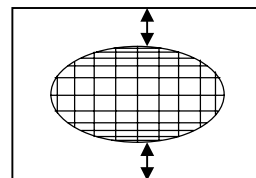


Figure 12

Vertical Shift

Adjust the Vertical Shift so that the picture is centred. The effect of this adjustment is shown in figure 13.

- When the volume up button is pressed, the picture moves down.
- When the volume down button is pressed, the picture moves up.
- Press the stand-by button on the remote control to store.

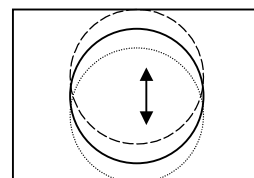


Figure 13

Colour Adjustments

The following adjustments should only be carried out when the CRT or IC850 are replaced.

G2 (screen), R-G-B Cut Off and Gain Adjustments

1. Follow the procedure below to set the G2

- 1.1 Tune the set to the output of a signal generator (monoscope pattern).
- 1.2 In the user menu, set contrast to 80/100 and brightness to 40/100 (TV normalized).
- 1.3 Select FULL MODE.
- 1.4 Enter the Service Mode.
- 1.5 Select RED GAIN in Service Mode.
- 1.6 Adjust SCREEN VR so that the OSD value (indicated on Figure 14) reaches $50h \pm 8h$.

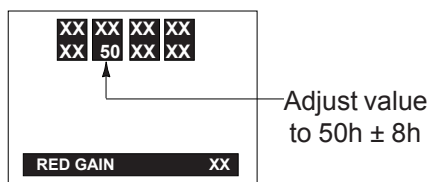


Figure 14

2. Follow the procedure below to set the Cut Off.

- 2.1 Adjust G2.
- 2.2 Tune a white pattern.
- 2.3 Adjust colour to minimum.
- 2.4 Position colorimeter in the centre of screen.
- 2.5 Adjust brightness and contrast to obtain a luminance of ≈ 3 NITS.
- 2.6 Set the RED CUT OFF to 32.
- 2.7 Operate in Service Mode and select location GREEN CUT OFF and BLUE CUT OFF, to obtain colour coordinates:

$$X=0.290 \pm 0.015 \quad Y=0.300 \pm 0.015$$

To increase press volume-up button and to decrease press volume down button.

GREEN CUT OFF alter «Y» coordinate.

BLUE CUT OFF alter «X» and «Y» coordinate.

3. Follow the procedure below to set the GAIN.

- 3.1 Using brightness and contrast buttons, select a luminance of ≈ 100 NITS.
- 3.2 Set the RED GAIN to 50.

3.3 Operate in Service Mode and select location GREEN GAIN and BLUE GAIN, to obtain colour coordinates:

$$X=0.290 \pm 0.015 \quad Y=0.300 \pm 0.015$$

To increase press volume-up button and to decrease press volume down button.

GREEN GAIN alter «Y» coordinate.

BLUE GAIN alter «X» and «Y» coordinate.

3.4 Exit Service Mode and check colour coordinates «X» and «Y» at 3 and 100 NITS. It may be necessary to repeat procedure 2 and 3 of Colour Adjustments.

R-G-B Cut Off and Gain Adjustments (alternative method).

In the event off a Colorimeter not being available, please follow the following procedures to obtain correct and Grey scale settings (R-G-B Cut Off and Gain).

1. In the user menu, set the picture levels to the FACTORY settings (normalised).
2. Enter the Service Mode.
3. Adjust the G2 as in the previous page procedure.
4. Set the 50, 51, 52, 53, 54 and 55 NVM positions on page 00 from the original value to 80. Store each location by pressing the stand-by button on the remote control.
5. Adjust grey scale as follows.
 - 5.1 Select a grey scale signal, then set the Red Cut-off level to 32 and the Red-Gain to 50.
 - 5.2 Leave the Red Cut-off and Gain as above and adjust Green and Blue Cut-off and Gain to achieve correct grey scale tracking. As with all grey scale adjustments it will be necessary to readjust the settings to achieve good tracking.

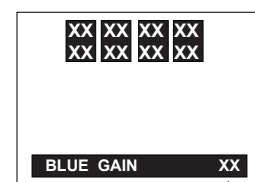


Figure 15

Note: The data to be adjusted is contained at the bottom right corner of the picture. See Figure 15.

Changing NVM Data

To change the data contained within the Non Volatile Memory, it is necessary to first select the page the data is stored in, then the position and finally to change the data itself. The procedure below outlines this process.

1. Press the channel up/down buttons and ALTER NVM PAG appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
2. Press the channel up button and ALTER NVM POS appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
3. Press the channel up button and ALTER NVM VAL appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
4. Once this data has been set, press the stand-by button to store.
5. If another NVM value has to be changed, use the channel down button to select the page or position and repeat as necessary.

Note: DO NOT change any NVM data, unless you have been advised to do so by a Sharp representative. If data is incorrectly changed, serious damage may occur to the receiver.

Contrast Adjustments

Three types of contrast levels can be varied as listed below:

- TELETEXT MIX MODE CONTRAST
- TELETEXT CONTRAST
- OSD CONTRAST

Use the volume up/down buttons to adjust to a suitable level, then. It is not necessary to press the stand-by button to store, **data are memorized by exiting the Service Mode.**

DVCO Adjustment (PAL)

Carry out the DVCO Adjustment (PAL) as shown below:

1. Receive a Philips pattern signal.
2. While in the DVCO ADJUSTMENT (PAL) menu, press the stand-by button.
3. The adjustment will be carried out automatically and stored.

DVCO Adjustment (NTSC)

No adjustment required.

AGC Adjustment (B/G)

To correctly align the "B/G" Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on CH E12 (B/G).
2. Adjust the signal strength of the pattern generator to 59dB/mV (75W).
3. Enter the Service Mode.
4. Enter the AGC Adjustment menu (although it only appears on screen "AGC Adjustment" you are in the "B/G" one).
5. Press the stand-by button on the remote control.
6. The adjustment will be carried out and stored automatically.

AGC Adjustment (L)

To correctly align the "L" Automatic Gain Control, follow the procedure outlined below:

1. Tune the set into a pattern generator on CH F10 (L).
2. Adjust the signal strength of the pattern generator to 59dB/mV (75W).
3. Enter the Service Mode.
4. Enter the AGC Adjustment menu (although it only appears on screen "AGC Adjustment" you are in the "L" one).
5. Press the stand-by button on the remote control.
6. The adjustment will be carried out and stored automatically.

Auto Installation On/Off

To return the receiver to the original Auto Installation mode, using the volume up or down button, set the Auto Installation On/Off to On. This setting is automatically stored and when the receiver is turned on the next time it will start up in Auto Installation mode.

LED FLASHING CODES

If the TV set does not work and the power indicator is flashing, follow the sequence according to the information below, as a guide to fault finding.

1. **Unable to read or write into NVM:** 66% ON, 33% OFF twice and OFF for a second.



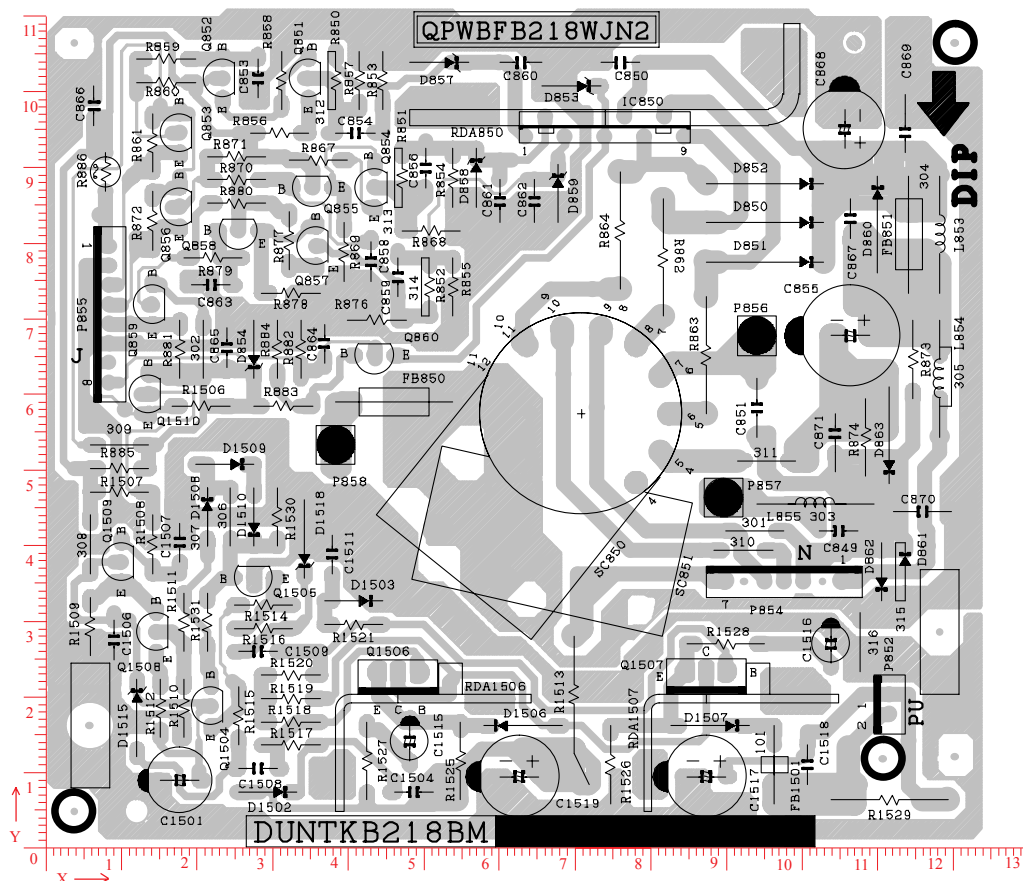
2. **MSP failure:** 66% ON, 33% OFF for three times and OFF for a second.



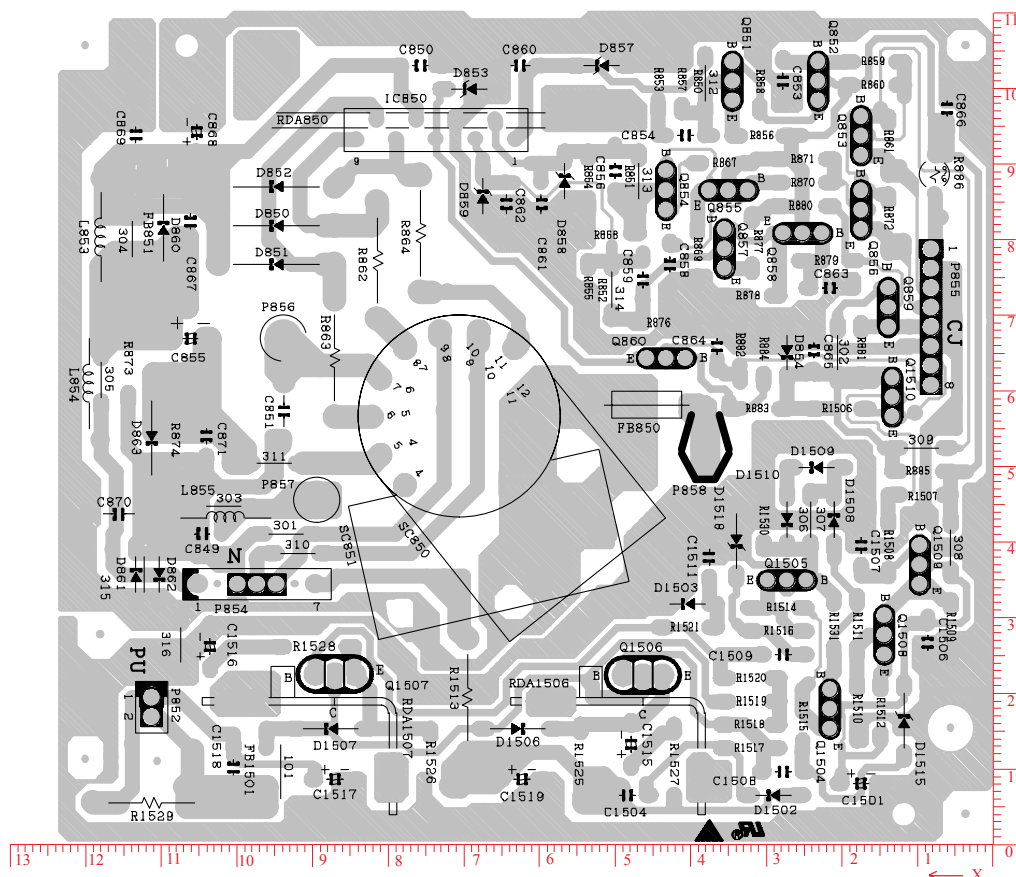
3. **VCT failure:** 66% ON, 33% OFF for four times and OFF for a second.



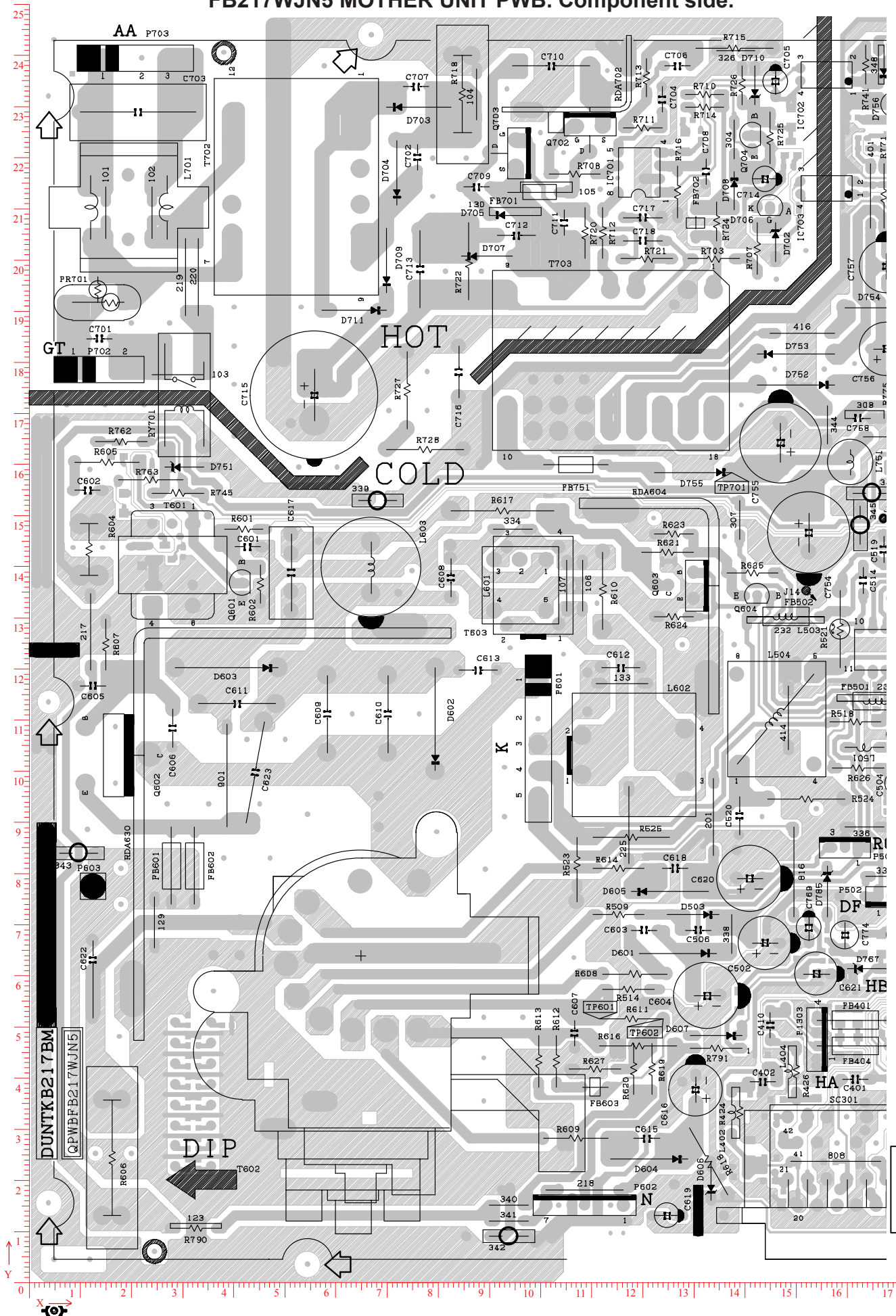
FB218WJN2 CRT UNIT PWB. Component side.



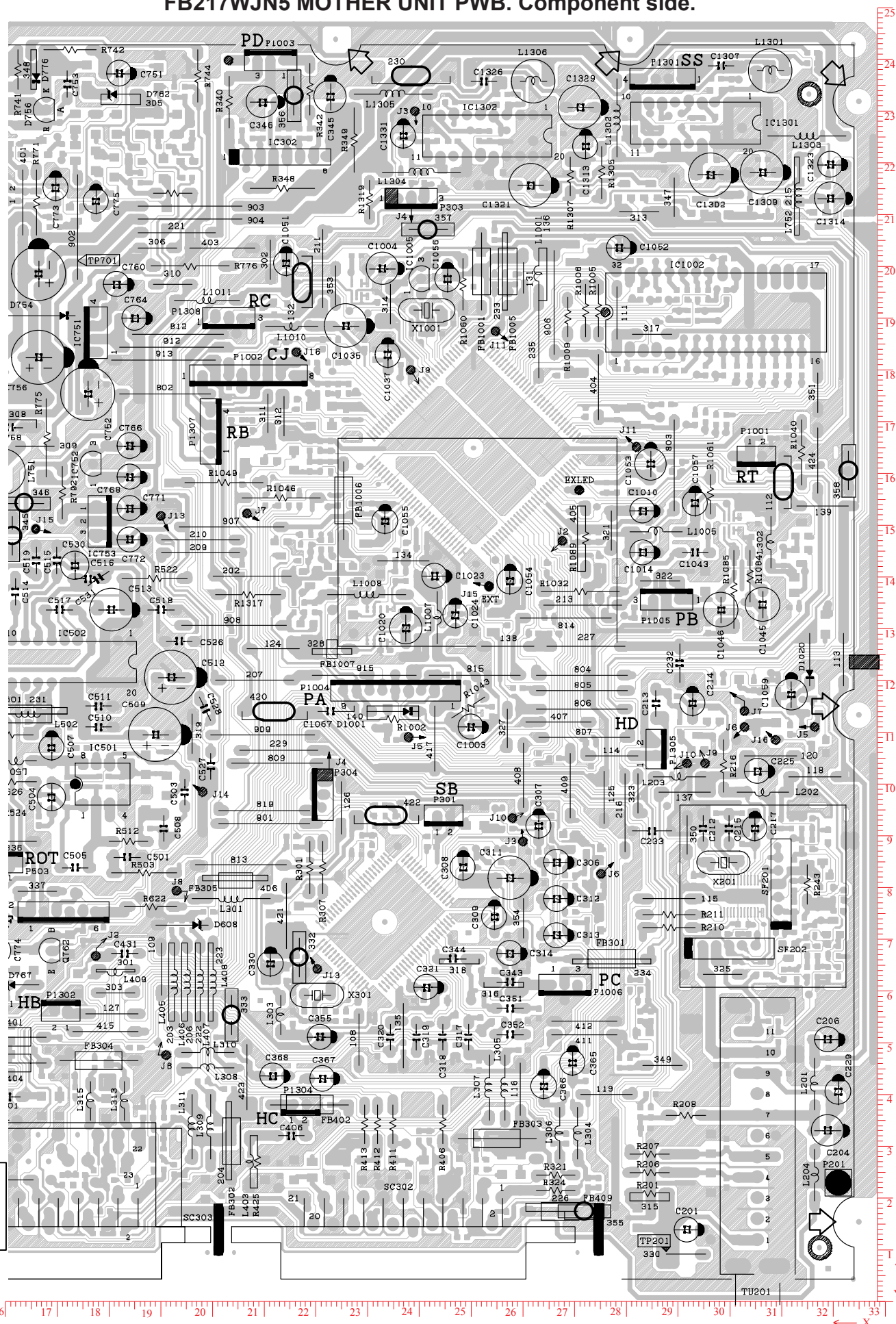
FB218WJN2 CRT UNIT PWB. Copper side.



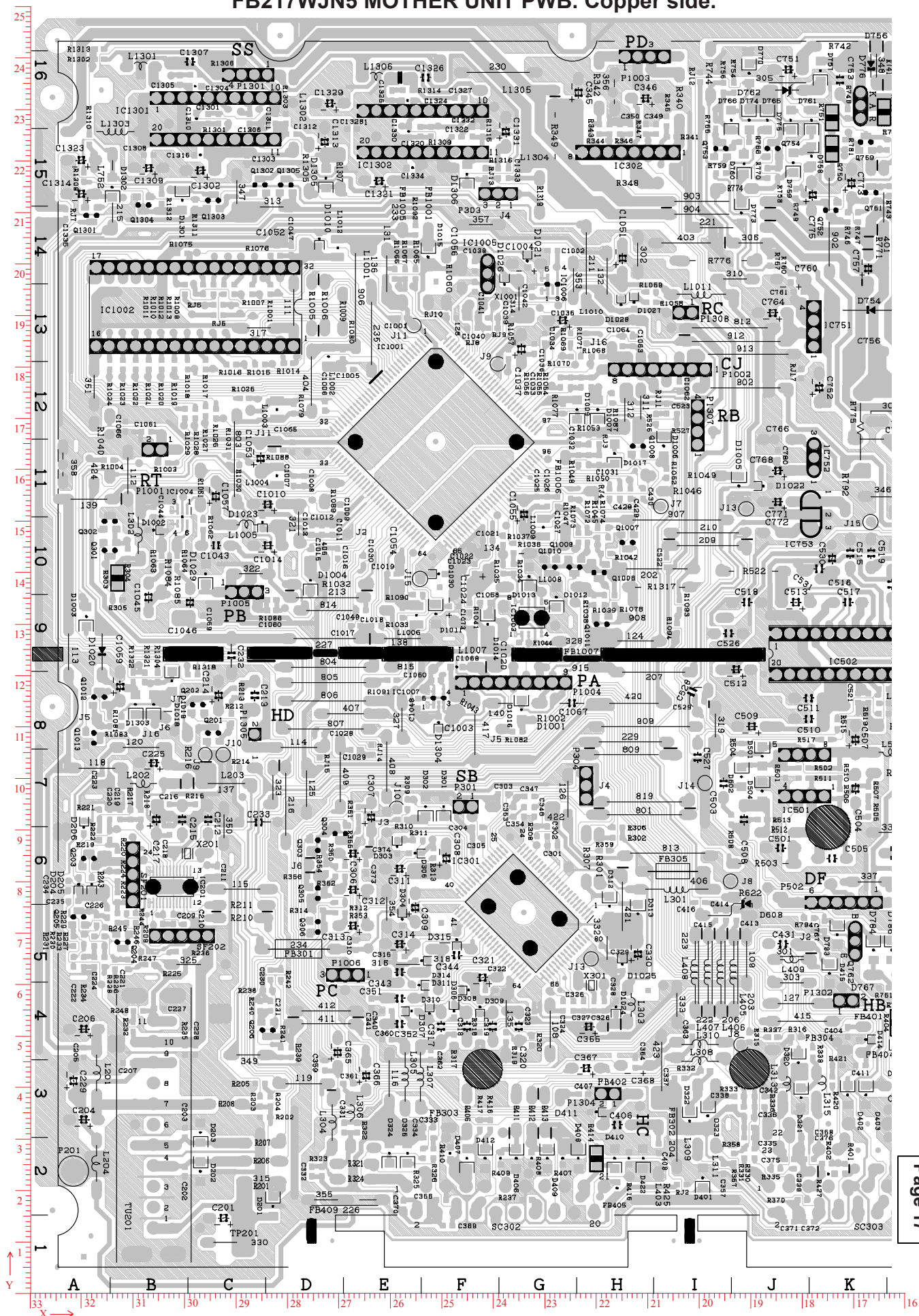
FB217WJN5 MOTHER UNIT PWB. Component side.



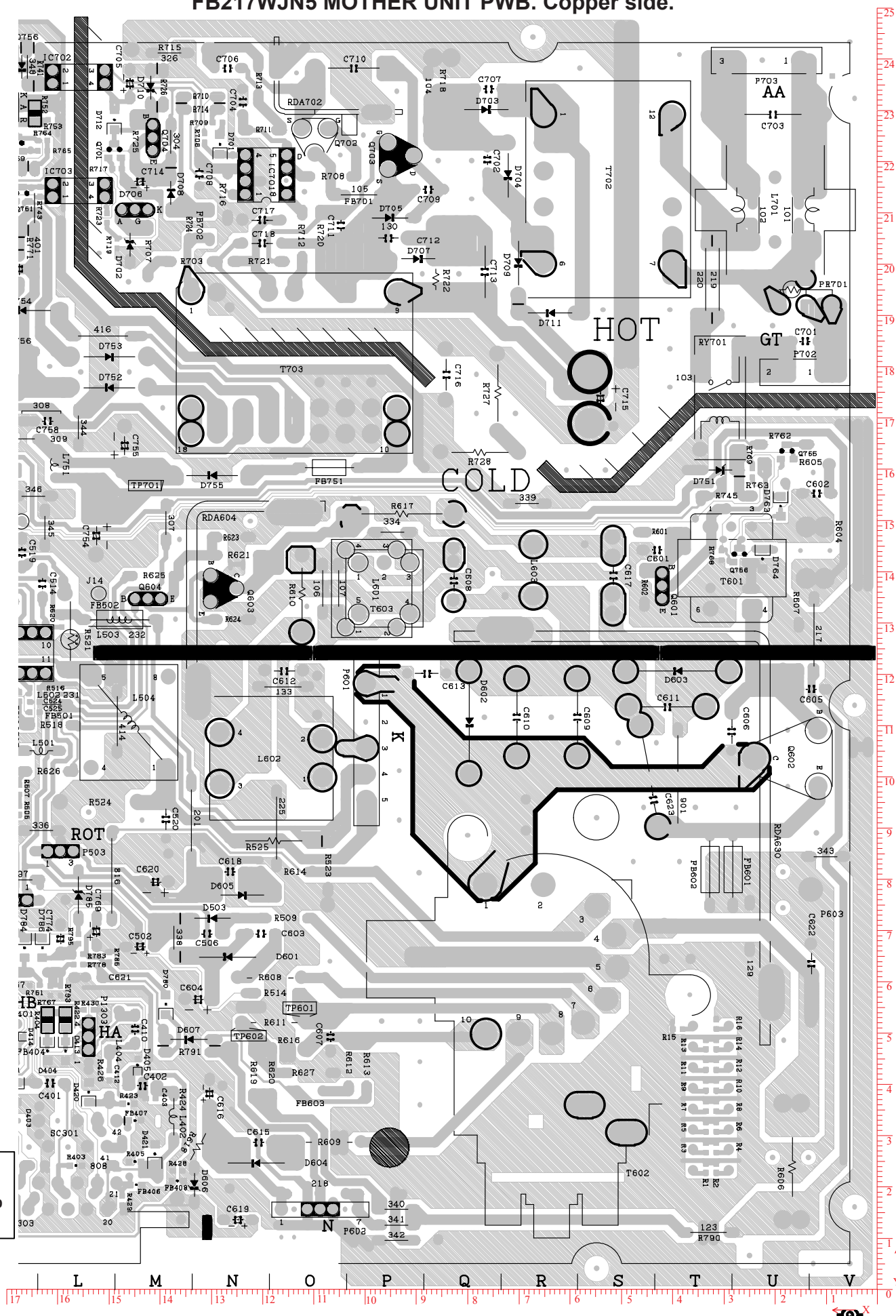
FB217WJN5 MOTHER UNIT PWB. Component side.



FB217WJN5 MOTHER UNIT PWB. Copper side.



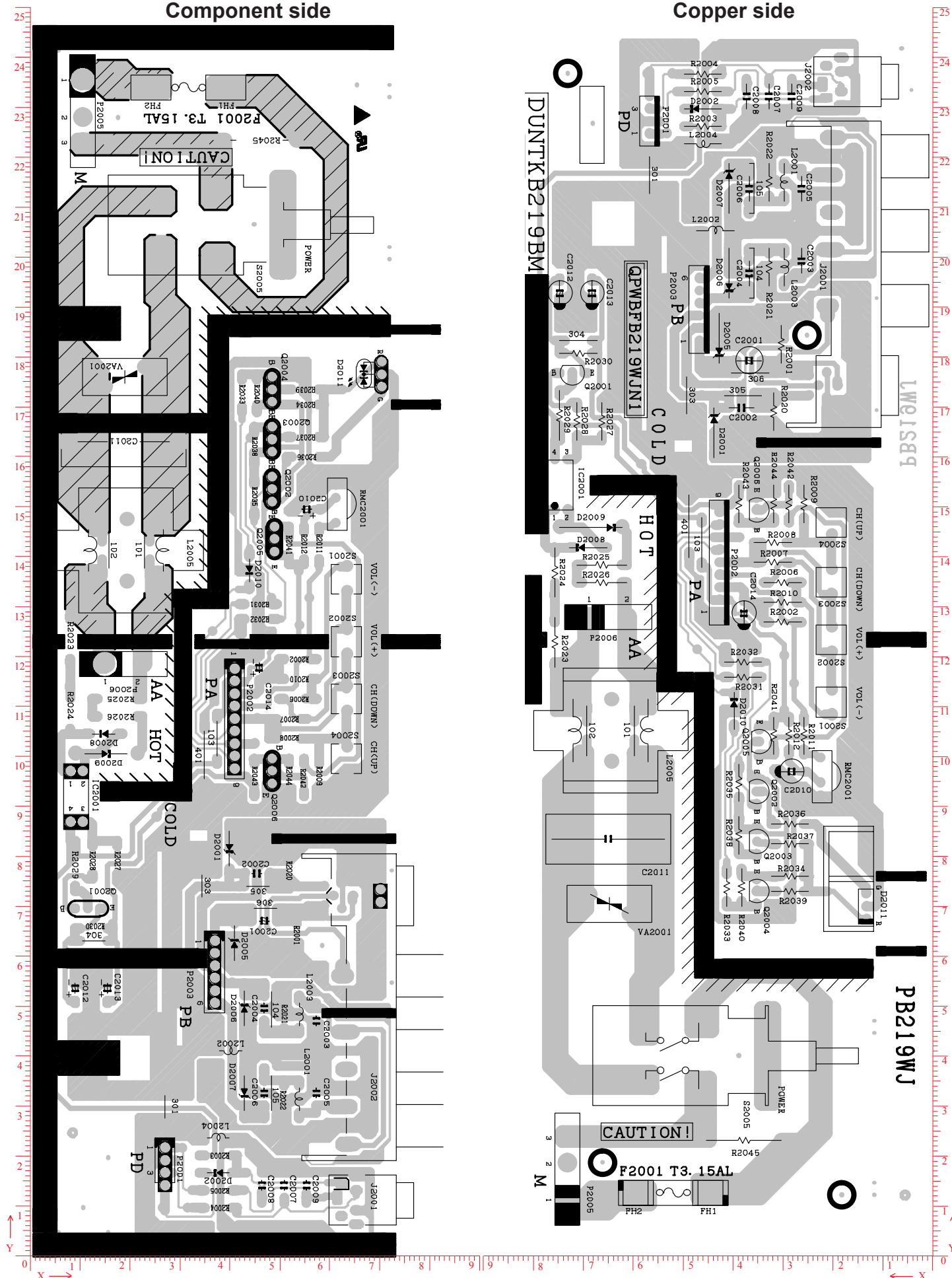
FB217WJN5 MOTHER UNIT PWB. Copper side.



FB219WJN1 CONTROL UNIT PWB

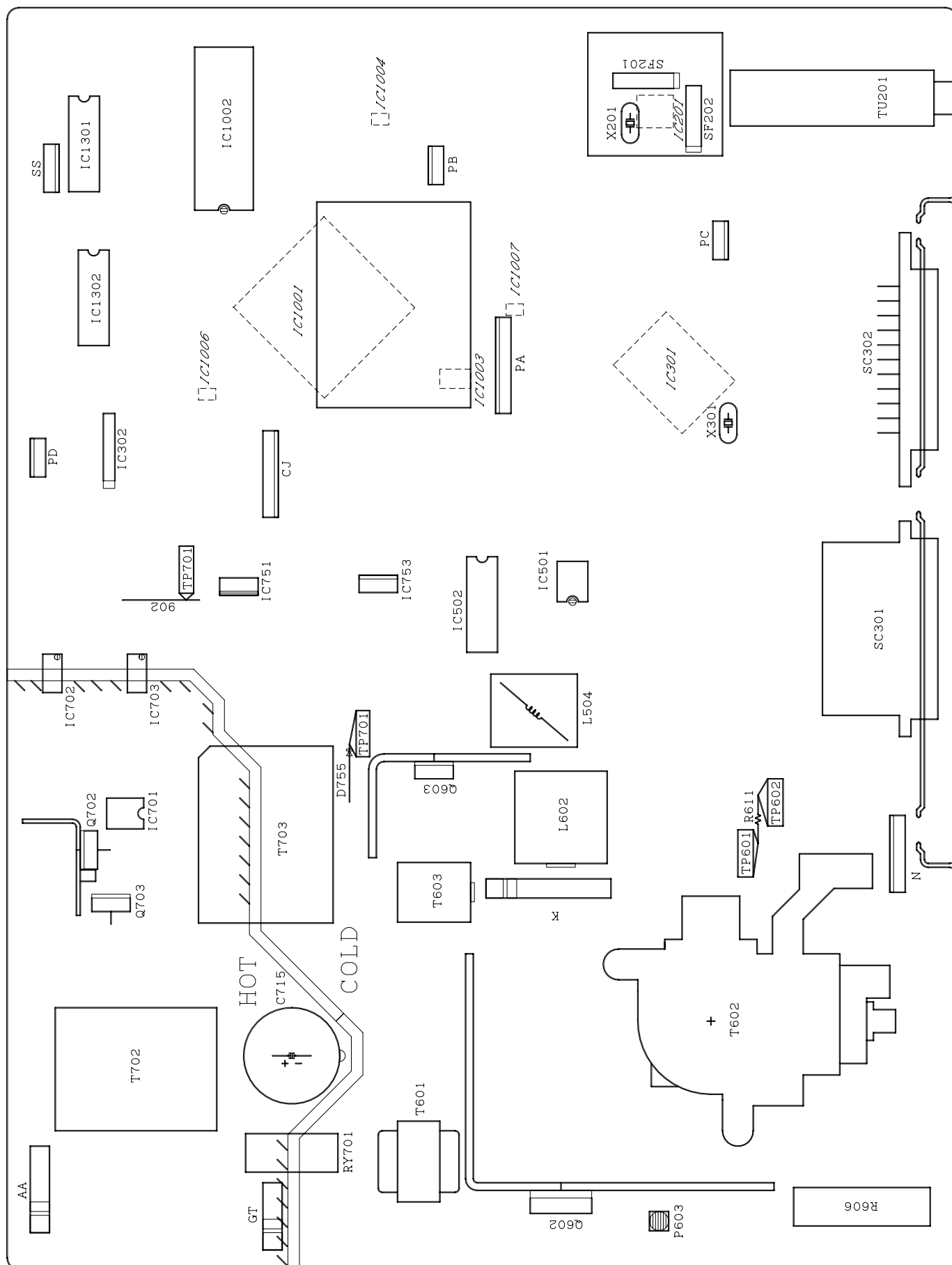
Component side

Copper side

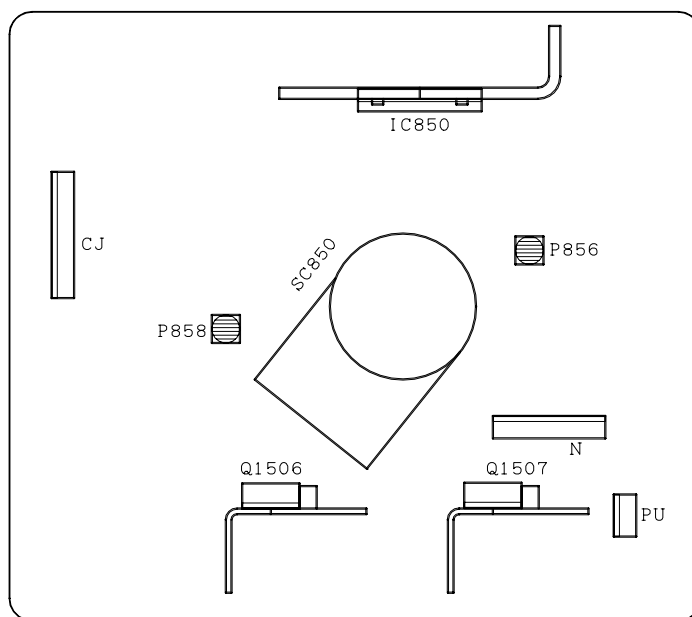


CHASSIS LAYOUT

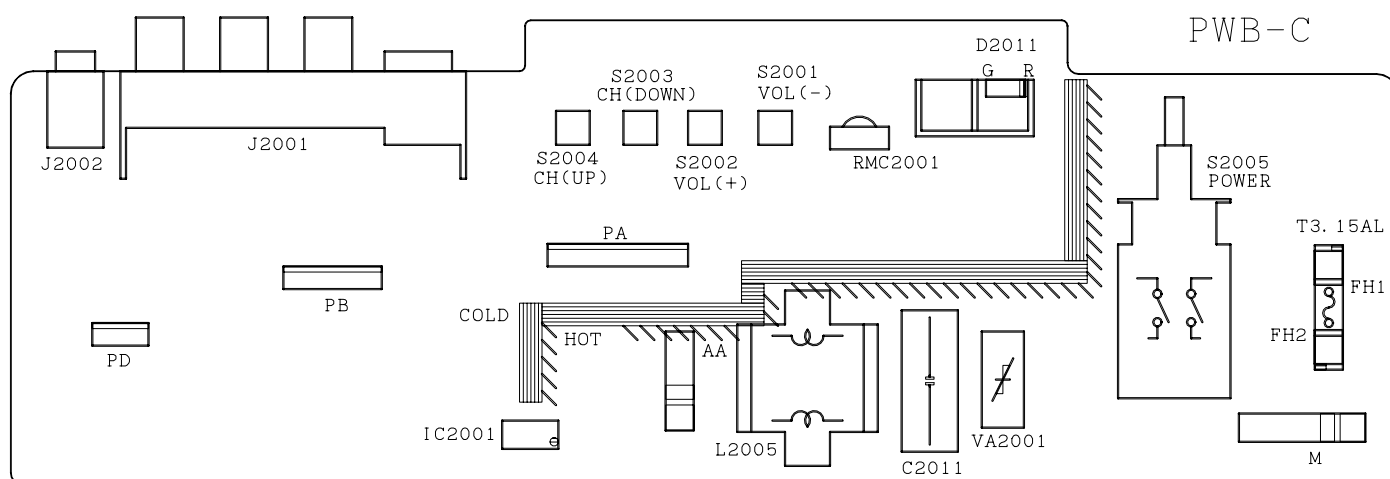
PWB A (Mother Unit, FB217N5).



PWB B CHASSIS LAYOUT (CRT SOCKET UNIT, FB218N2).



PWB C CHASSIS LAYOUT (FRONTAL POWER-CONTROL UNIT, FB219N1).



ICs ADDITIONAL INFORMATION

TDA9886 (IC201)

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_P	supply voltage	notes 1 and 2	4.5	5.0	5.5	V
I_P	supply current		52	63	70	mA
Video part						
$V_{i(VIF)(rms)}$	VIF input voltage sensitivity (RMS value)	−1 dB video at output	–	60	100	μ V
$G_{VIF(cr)}$	VIF gain control range	see Fig.7	60	66	–	dB
f_{VIF}	vision carrier operating frequencies	see Table 14	–	33.4	–	MHz
			–	33.9	–	MHz
			–	38.0	–	MHz
			–	38.9	–	MHz
			–	45.75	–	MHz
			–	58.75	–	MHz
Δf_{VIF}	VIF frequency window of digital acquisition help	related to f_{VIF} ; see Fig.10	–	± 2.3	–	MHz
$V_{o(video)(p-p)}$	video signal output voltage (peak-to-peak value)	see Fig.5				
		normal mode	1.7	2.0	2.3	V
G_{dif}	differential gain	trap bypass mode	0.95	1.10	1.25	V
		“CCIR 330”; note 3				
		B/G standard	–	–	5	%
Φ_{dif}	differential phase	L standard	–	–	7	%
		“CCIR 330”	–	2	4	deg
$B_{video(-1dB)}$	−1 dB video bandwidth	trap bypass mode; AC load; $C_L < 20$ pF; $R_L > 1$ k Ω	5	6	–	MHz
$B_{video(-3dB)(trap)}$	−3 dB video bandwidth including sound carrier trap	note 4				
		$f_{trap} = 4.5$ MHz	3.95	4.05	–	MHz
		$f_{trap} = 5.5$ MHz	4.90	5.00	–	MHz
		$f_{trap} = 6.0$ MHz	5.40	5.50	–	MHz
		$f_{trap} = 6.5$ MHz	5.50	5.95	–	MHz
α_{SC1}	trap attenuation at first sound carrier	M/N standard	30	36	–	dB
		B/G standard	30	36	–	dB
$S/N_{W(video)}$	weighted signal-to-noise ratio of video signal	see Fig.11; note 5	56	59	–	dB
$PSRR_{CVBS}$	power supply ripple rejection at pin CVBS	$f_{ripple} = 70$ Hz; see Fig.6; note 6	20	25	–	dB
AFC_{stps}	AFC control steepness	definition: $\Delta I_{AFC}/\Delta f_{VIF}$	0.85	1.05	1.25	μ A/kHz
Audio part						
$V_{o(AF)(rms)}$	AF output voltage (RMS value)	27 kHz FM deviation; 50 μ s de-emphasis	430	540	650	mV
THD	total harmonic distortion of audio signal	FM: 27 kHz FM deviation; 50 μ s de-emphasis	–	0.15	0.50	%
		AM: m = 54%	–	0.5	1.0	%

TDA9886 (IC201)

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
B _{AF} (−3dB)	−3 dB AF bandwidth	without de-emphasis; dependent on FM-PLL filter	80	100	–	kHz
S/N _{W(AF)}	weighted signal-to-noise ratio of audio signal	FM: 27 kHz FM deviation; 50 μs de-emphasis; vision carrier unmodulated	52	56	–	dB
		AM: m = 54%	45	50	–	dB
α _{AM(sup)}	AM suppression of FM demodulator	50 μs de-emphasis; AM: f = 1 kHz and m = 54%; referenced to 27 kHz FM deviation	40	46	–	dB
PSRR _{AUD}	power supply ripple rejection on pin AUD	f _{ripple} = 70 Hz; see Fig.6 for AM	20	26	–	dB
		for FM	14	20	–	dB
V _{o(intc)(rms)}	IF intercarrier output level (RMS value)	QSS mode; SC ₁ ; SC ₂ off	90	140	180	mV
		L standard; without modulation	90	140	180	mV
		intercarrier mode; SC ₁ ; SC ₂ off; note 7	–	–	–	mV
Reference frequency						
f _{ref}	reference signal frequency	note 8	–	4	–	MHz
V _{ref(rms)}	reference signal voltage (RMS value)	operation as input terminal	80	–	400	mV

Notes

- Values of video and sound parameters can be decreased at $V_P = 4.5$ V.
- For applications without I²C-bus, the time constant ($R \times C$) at the supply must be $>1.2 \mu$ s (e.g. 1 Ω and 2.2 μ F).
- Condition: luminance range (5 steps) from 0% to 100%.
- AC load: $C_L < 20$ pF and $R_L > 1$ k Ω . The sound carrier frequencies (depending on the TV standard) are attenuated by the integrated sound carrier traps (see Figs 13 to 18; $|H(s)|$ is the absolute value of transfer function).
- $S/N_{W(video)}$ is the ratio of the black-to-white amplitude to the black level noise voltage (RMS value measured on pin CVBS). B = 5 MHz weighted in accordance with "CCIR 567".
- Conditions: video signal, grey level, positive and negative modulation.
- The intercarrier output signal at pin SIOMAD can be calculated by the following formula taking into account the internal video signal with 1.1 V (p-p) as a reference:

$$V_{o(intc)} = 1.1 \text{ V (p-p)} \times \frac{1}{2\sqrt{2}} \times 10^{\frac{\frac{V_{i(SC)}(dB) + 6 \text{ dB} \pm 3 \text{ dB}}{V_{i(PC)}}}{20}} \quad (\text{RMS}), \text{ where: } \frac{1}{2\sqrt{2}} \text{ is the correction term for RMS value,}$$

$\frac{V_{i(SC)}}{V_{i(PC)}}(dB)$ is the sound-to-picture carrier ratio at pins VIF1 and VIF2 in dB, 6 dB is the correction term of internal circuitry and ± 3 dB is the tolerance of video output and intercarrier output $V_{o(intc)(rms)}$.

- Pin REF is able to operate as a 1-pin crystal oscillator input as well as an external reference signal input, e.g. from the tuning system.

TDA9886 (IC201)

BLOCK DIAGRAM

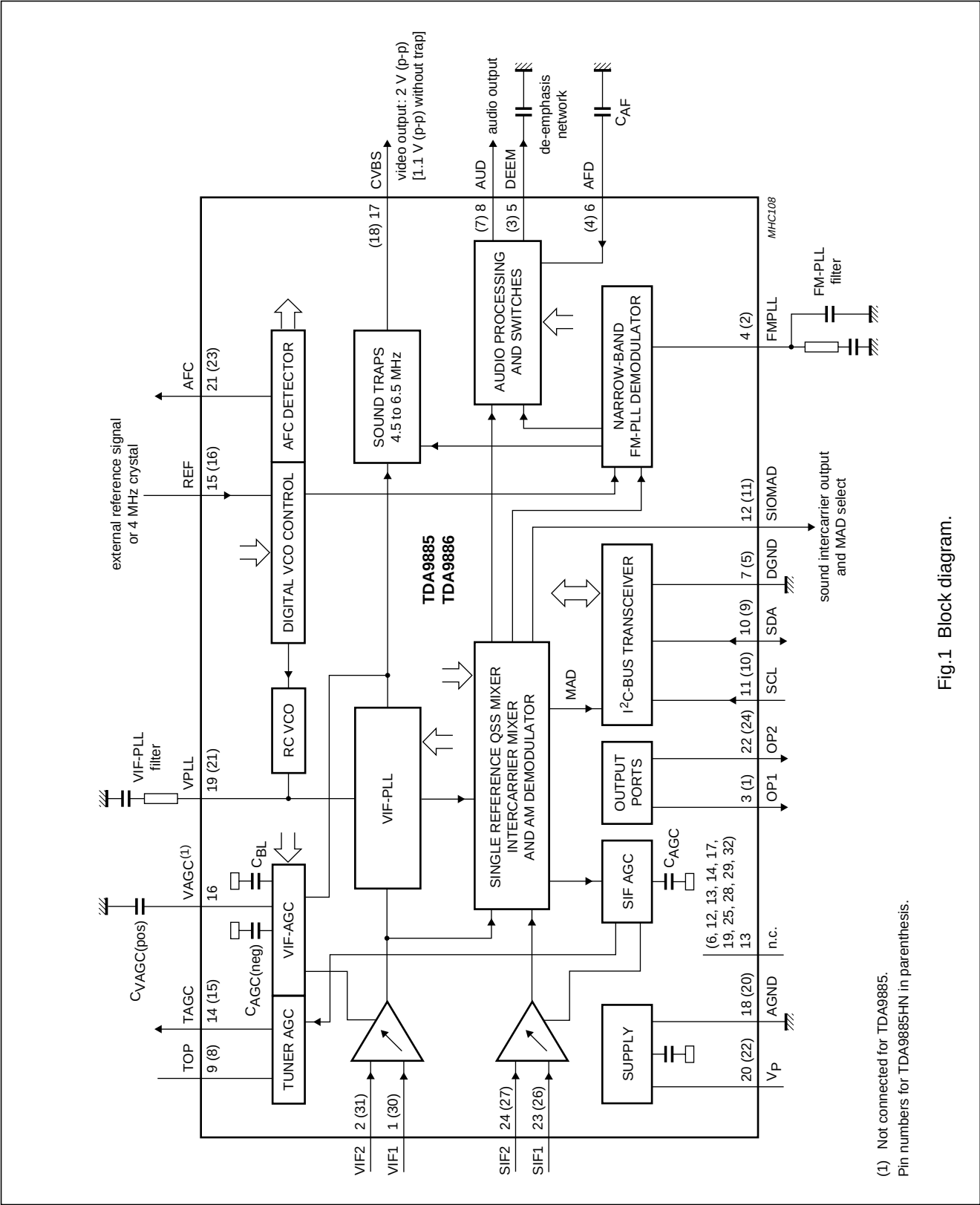


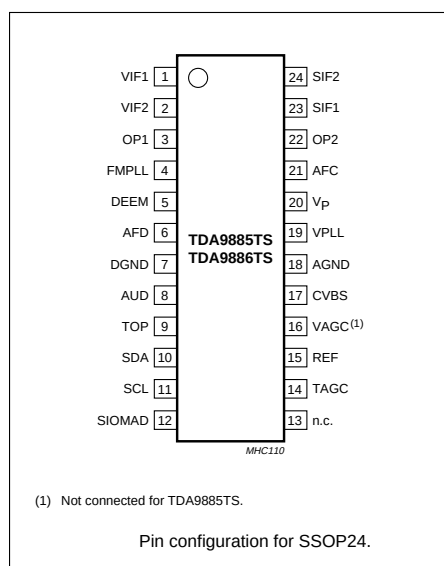
Fig.1 Block diagram.

(1) Not connected for TDA9885.
Pin numbers for TDA9885HN in parenthesis.

TDA9886 (IC201)

PINNING

SYMBOL	PIN			DESCRIPTION
	TDA9886T TDA9886TS	TDA9885T TDA9885TS	TDA9885HN	
VIF1	1	1	30	VIF differential input 1
VIF2	2	2	31	VIF differential input 2
n.c.	–	–	32	not connected
OP1	3	3	1	output port 1; open-collector
FMPLL	4	4	2	FM-PLL for loop filter
DEEM	5	5	3	de-emphasis output for capacitor
AFD	6	6	4	AF decoupling input for capacitor
DGND	7	7	5	digital ground
n.c.	–	–	6	not connected
AUD	8	8	7	audio output
TOP	9	9	8	tuner AGC TakeOver Point (TOP) for resistor adjustment
SDA	10	10	9	I ² C-bus data input and output
SCL	11	11	10	I ² C-bus clock input
SIOMAD	12	12	11	sound intercarrier output and MAD select with resistor
n.c.	–	–	12	not connected
n.c.	13	13	13	not connected
n.c.	–	–	14	not connected
TAGC	14	14	15	tuner AGC output
REF	15	15	16	4 MHz crystal or reference signal input
VAGC	16	–	–	VIF-AGC for capacitor
n.c.	–	16	17	not connected
CVBS	17	17	18	composite video output
n.c.	–	–	19	not connected
AGND	18	18	20	analog ground
VPLL	19	19	21	VIF-PLL for loop filter
V _P	20	20	22	supply voltage
AFC	21	21	23	AFC output
OP2	22	22	24	output port 2; open-collector
n.c.	–	–	25	not connected
SIF1	23	23	26	SIF differential input 1 and MAD select with resistor
SIF2	24	24	27	SIF differential input 2 and MAD select with resistor
n.c.	–	–	28	not connected
n.c.	–	–	29	not connected



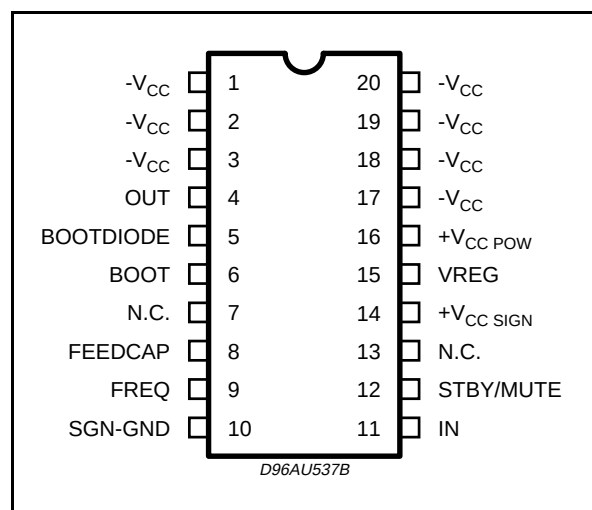
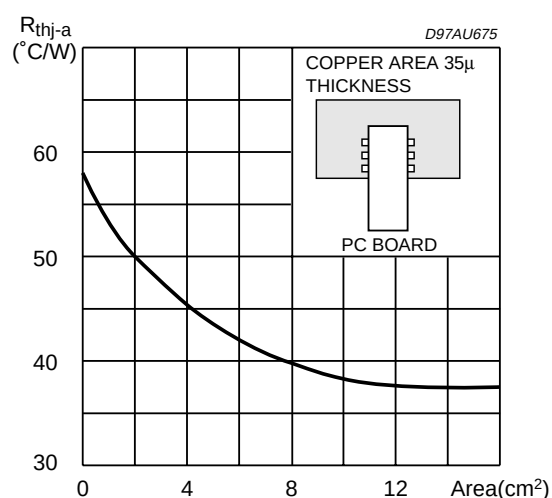
TDA7480 (IC1301,IC1302)

TDA7480

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	DC Supply Voltage	± 20	V
T_{stg}, T_j	Storage and Junction Temperature	-40 to 150	°C
V_{FREQ}	Maximum Voltage Across VFREQ (Pin 9)	8	V
T_{op}	Operating Temperature Range	-20 to 70	°C
ESD	Maximum ESD on Pins	± 1.8	kV

PIN CONNECTION (Top view)

R_{th} with "on board" Square Heatsink vs. copper area.

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\ j-amb}$	Thermal Resistance Junction to ambient	80	°C/W
$R_{th\ j-pin}$	Thermal Resistance Junction to Pin	Max. 12	°C/W

PIN FUNCTIONS

N.	Name	Function
1	-V _{CC}	NEGATIVE SUPPLY.
2	-V _{CC}	NEGATIVE SUPPLY.
3	-V _{CC}	NEGATIVE SUPPLY.
4	OUT	PWM OUTPUT
5	BOOTDIODE	BOOTSTRAP DIODE ANODE
6	BOOT	BOOTSTRAP CAPACITOR
7	NC	NOT CONNECTED
8	FEEDCAP	FEEDBACK INTEGRATING CAPACITANCE
9	FREQUENCY	SETTING FREQUENCY RESISTOR
10	SGN-GND	SIGNAL GROUND
11	IN	INPUT
12	ST-BY-MUTE	ST-BY/ MUTE CONTROL PIN
13	NC	NOT CONNECTED
14	+V _{CC} SIGN	POSITIVE SIGNAL SUPPLY
15	VREG	10V INTERNAL REGULATOR
16	+V _{CC} POW	POSITIVE POWER SUPPLY
17	-V _{CC}	NEGATIVE SUPPLY (TO BE CONNECTED TO PIN 16 VIA C5)
18	-V _{CC}	NEGATIVE SUPPLY
19	-V _{CC}	NEGATIVE SUPPLY
20	-V _{CC}	NEGATIVE SUPPLY

TDA7480 (IC1301,IC1302)

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, $V_{CC} = \pm 14V$; $R_L = 8\Omega$; $R_S = 50\Omega$; $R_f = 12K\Omega$; Demod.. filter $L = 60\mu H$, $C = 470nF$; $f = 1KHz$; $T_{amb} = 25^\circ C$ unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Range		± 10		± 16	V
I_q	Total Quiescent Current	$R_L = \infty$; NO LC Filter		25	40	mA
V_{OS}	Output Offset Voltage	Play Condition	-50		+50	mV
P_O	Output Power	THD = 10% THD = 1%	8.5 6	10 7		W W
		$R_L = 4\Omega$ $V_{CC} = \pm 10.5V$ THD = 10% THD = 1%		10 7		W W
$P_d (*)$	Dissipated Power at 1W Output Power	$R_f = 12K\Omega$ $P_O = 1W$		1		W
P_{DMAX}	Maximum Dissipated Power	$P_O = 10W$ THD 10% $R_{th-j-amb} = 38^\circ C/W$ (Area $12cm^2$)		1.8		W
η	Efficiency $\equiv \frac{P_O}{P_O + P_D} \equiv \frac{P_O}{P_i} (**)$	THD 10% $R_{th-j-amb} = 38^\circ C/W$ (Area $12cm^2$)	80	85		%
THD	Total Harmonic Distortion	$R_L = 8\Omega$; $P_O = 0.5W$		0.1		%
I_{max}	Overcurrent Protection Threshold	$R_L = 0$	3.5	5		A
T_j	Thermal Shut-down Junction Temperature			150		$^\circ C$
G_V	Closed Loop Gain		29	30	31	dB
e_N	Total Input Noise	A Curve $f = 20Hz$ to $22KHz$		7 12		μV μV
R_i	Input Resistance		20	30		$K\Omega$
SVR	Supply Voltage Rejection	$f = 100Hz$; $V_r = 0.5$	46	60		dB
T_r, T_f	Rising and Falling Time			50		ns
$R_{DS(on)}$	Power Transistor on Resistance			0.4		Ω
F_{SW}	Switching Frequency		100	120	140	KHz
F_{SW_OP}	Switching Frequency Operative Range		100		200	KHz
B_F	Zero Signal Frequency Constant (***)			1.4×10^9		Hz Ω
R_F	Frequency Controller Resistor Range (****)		7	12	14	$K\Omega$
MUTE & STAND-BY FUNCTIONS						
V_{ST-BY}	Stand-by range				0.8	V
V_{MUTE}	Mute Range		1.8		2.5	V
V_{PLAY}	Play Range (1)		4			V
A_{MUTE}	Mute Attenuation		60	80		dB
I_{qST-BY}	Quiescent Current @ Stand-by			3	5	mA

*: The output average power when the amplifier is playing music can be considered roughly 1/10 of the maximum output power. So it is useful to consider the dissipated power in this condition for thermal dimensioning.

** P_O = measured across the load using the following inductor:

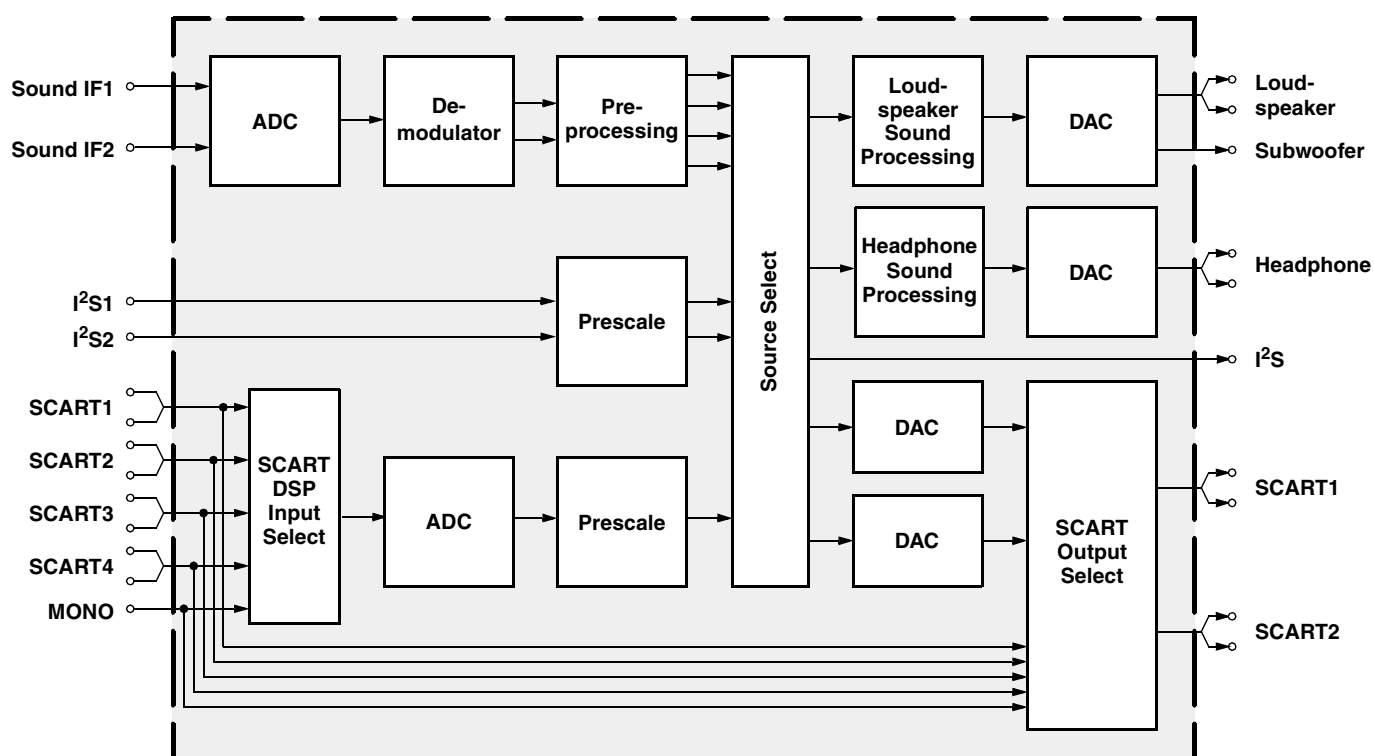
COIL 58120 MPPA2 (magnetics) TURNS: 28 $\varnothing$ 1mm
COIL77120 KOOL M μ (magnetics) TURNS: 28 $\varnothing$ 1mm

***: The zero-signal switching frequency can be obtained using the following expression: $F_{SW} = B_F/R_F$

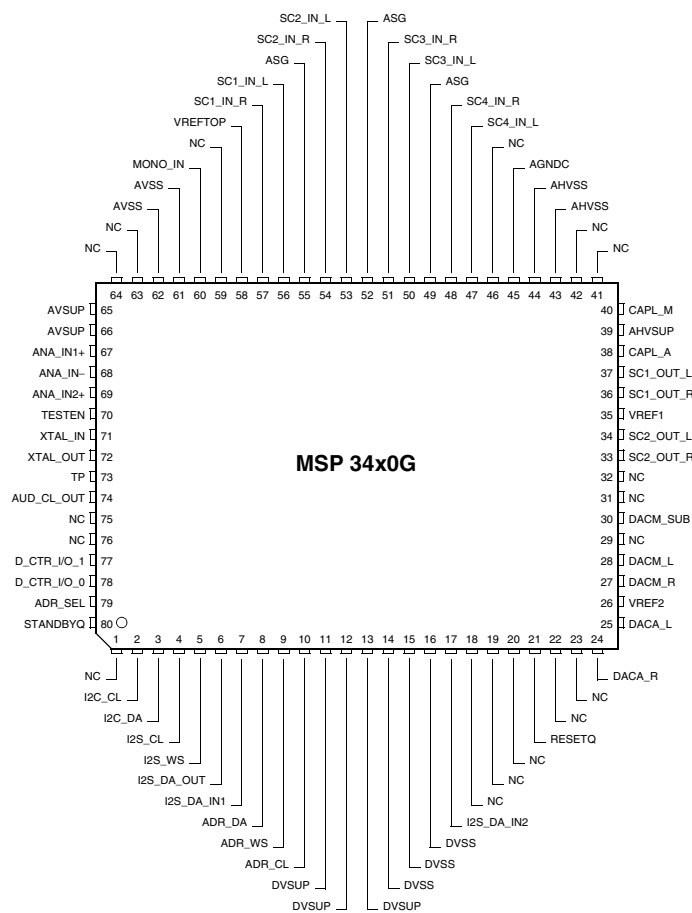
****: The maximum value of R_F is related to the maximum possible value for the voltage drop on R_F itself.

(1): For $V_{12} > 5.2V$, an input impedance of $10K\Omega$ is to be considered.

MSP3410G (IC301)



Simplified functional block diagram of the MSP 34x0G



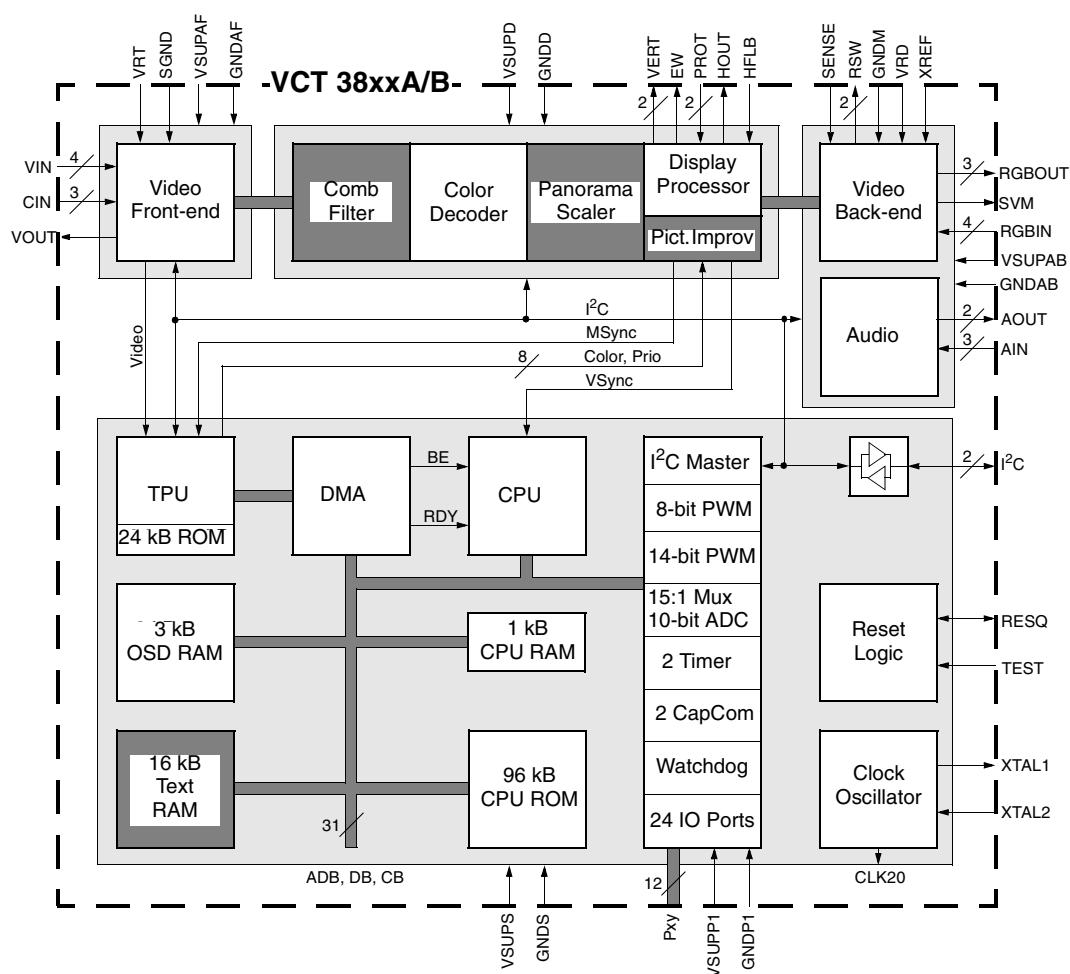
PQFP80 package

MSP3410G (IC301)**Absolute Maximum Ratings**

Symbol	Parameter	Pin Name	Min.	Max.	Unit
T_A	Ambient Operating Temperature	–	0	70	°C
T_S	Storage Temperature	–	–40	125	°C
V_{SUP1}	First Supply Voltage	AHVSUP	–0.3	9.0	V
V_{SUP2}	Second Supply Voltage	DVSUP	–0.3	6.0	V
V_{SUP3}	Third Supply Voltage	AVSUP	–0.3	6.0	V
dV_{SUP23}	Voltage between AVSUP and DVSUP	AVSUP, DVSUP	–0.5	0.5	V
P_{TOT}	Power Dissipation PLCC68 PSDIP64 PSDIP52 PQFP80 PLQFP64	AHVSUP, DVSUP, AVSUP		1200 1300 1200 1000 960	mW mW mW mW mW
V_{Idig}	Input Voltage, all Digital Inputs		–0.3	$V_{SUP2}+0.3$	V
I_{Idig}	Input Current, all Digital Pins	–	–20	+20	mA ¹⁾
V_{Iana}	Input Voltage, all Analog Inputs	SCn_IN_s, ²⁾ MONO_IN	–0.3	$V_{SUP1}+0.3$	V
I_{Iana}	Input Current, all Analog Inputs	SCn_IN_s, ²⁾ MONO_IN	–5	+5	mA ¹⁾
I_{Oana}	Output Current, all SCART Outputs	SCn_OUT_s ²⁾	3), 4)	3), 4)	
I_{Oana}	Output Current, all Analog Outputs except SCART Outputs	DACp_s ²⁾	3)	3)	
I_{Cana}	Output Current, other pins connected to capacitors	CAPL_p, ²⁾ AGNDC	3)	3)	
¹⁾ positive value means current flowing into the circuit ²⁾ “n” means “1”, “2”, “3”, or “4”, “s” means “L” or “R”, “p” means “M” or “A” ³⁾ The analog outputs are short-circuit proof with respect to First Supply Voltage and ground. ⁴⁾ Total chip power dissipation must not exceed absolute maximum rating.					

Stresses beyond those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only. Functional operation of the device at these or any other conditions beyond those indicated in the “Recommended Operating Conditions/Characteristics” of this specification is not implied. Exposure to absolute maximum ratings conditions for extended periods may affect device reliability.

VCT3834 (IC1001)



Block diagram of the VCT 38xxA/B (shaded blocks are optional)

The block diagram does not show the additional features of VCT 38xxB.

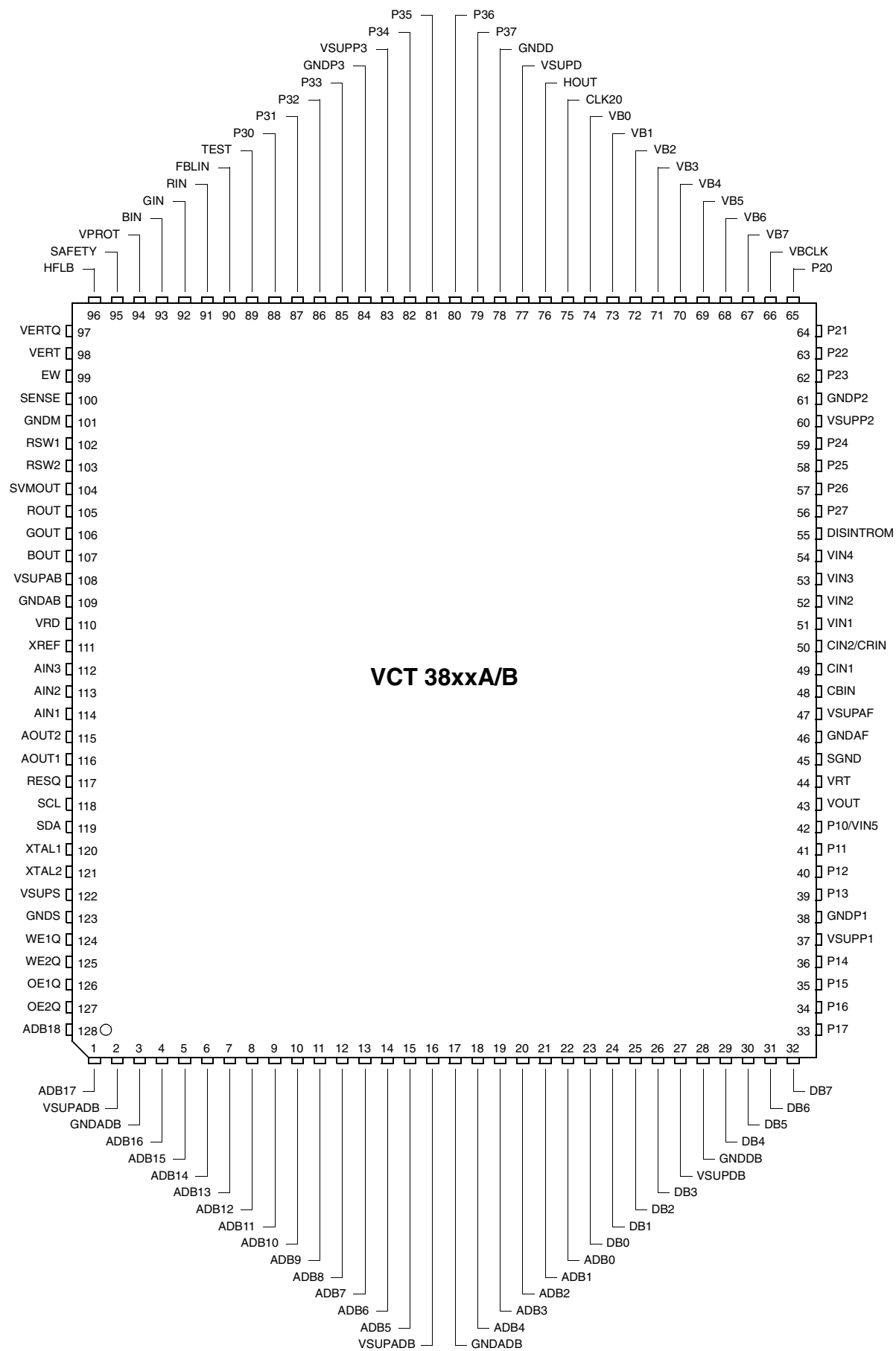
Absolute Maximum Ratings

Symbol	Parameter	Pin Name	Min.	Max.	Unit
T_A	Ambient Operating Temperature		–	65	°C
T_S	Storage Temperature		–40	125	°C
P_{TOT}	Total Power Dissipation		–	1400	mW
$VSUP_x$	Supply Voltage	$VSUP_x$	–0.3	6	V
V_I	Input Voltage, all Inputs		–0.3	$VSUP_x + 0.3^{1)}$	V
V_O	Output Voltage, all Outputs		–0.3	$VSUP_x + 0.3^{1)}$	V
V_{IO}	Input/Output Voltage, all Open Drain Outputs		–0.3	6	V

¹⁾ Refer to Pin Circuits (chapter 6.6. on page 157)

Stresses beyond those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only. Functional operation of the device at these or any other conditions beyond those indicated in the “Recommended Operating Conditions/Characteristics” of this specification is not implied. Exposure to absolute maximum ratings conditions for extended periods may affect device reliability.

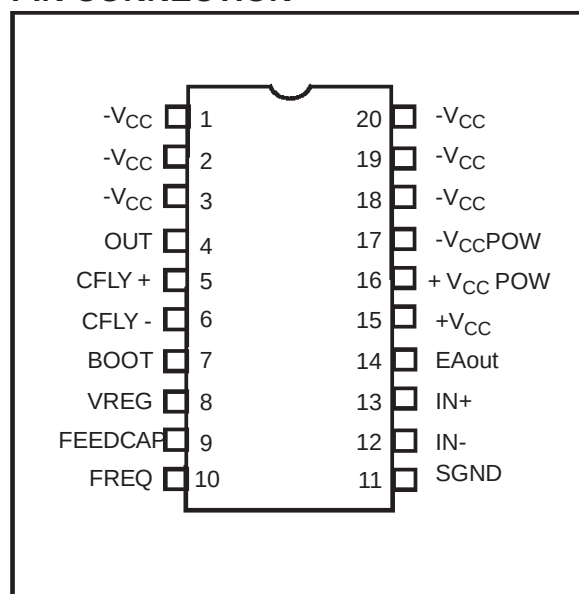
VCT3834 (IC1001)



PMQFP128 package

STV9380 (IC502)

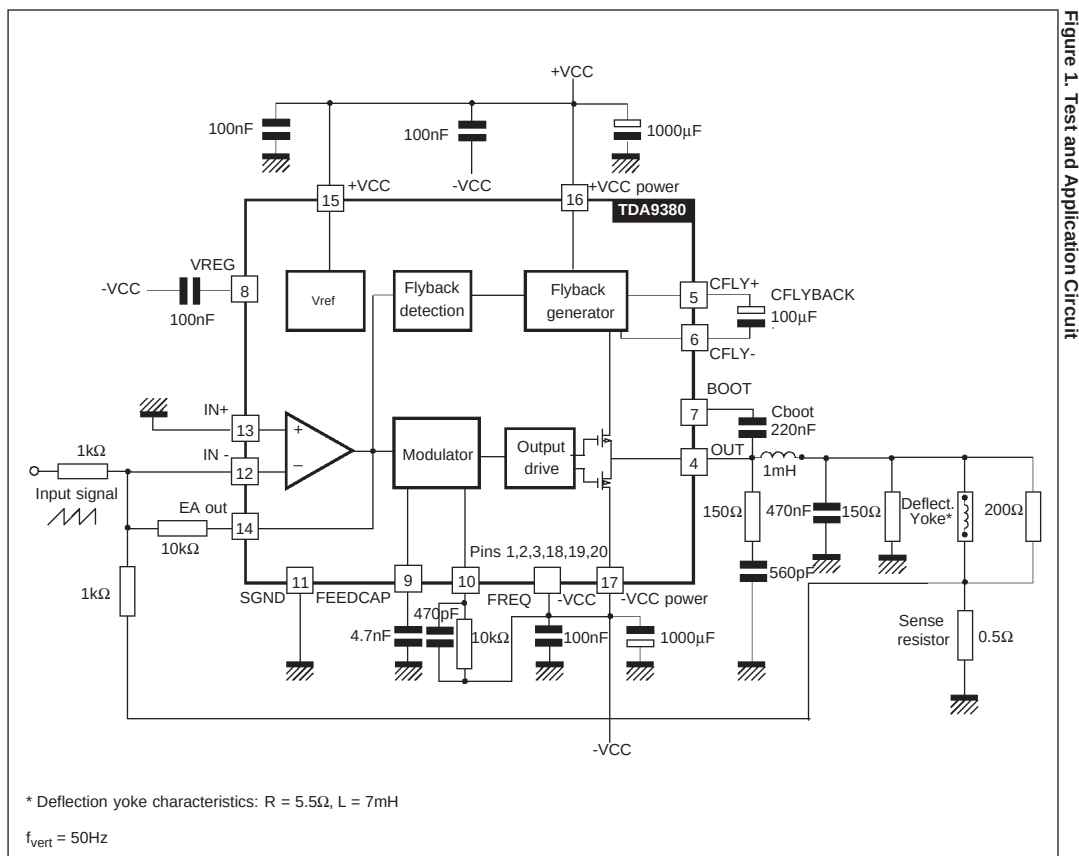
PIN CONNECTION



PIN FUNCTIONS

Pin Number	Name	Function
1	-V _{CC}	Negative supply
2	-V _{CC}	Negative supply
3	-V _{CC}	Negative supply
4	OUT	PWM Output
5	CFLY+	Flyback capacitor
6	CFLY-	Flyback capacitor
7	BOOT	Bootstrap capacitor
8	VREG	Internal voltage regulator
9	FEEDCAP	Feed-back integrating capacitor
10	FREQ	Frequency setting resistor
11	SGND	Signal Ground
12	IN-	Error amplifier inverting input
13	IN+	Error amplifier non-inverting input
14	EA out	Error amplifier output
15	+V _{CC}	Positive supply
16	+V _{CC} POW	Positive Power supply
17	-V _{CC} POW	Negative Power supply
18	-V _{CC}	Negative supply
19	-V _{CC}	Negative supply
20	-V _{CC}	Negative supply

STV9380 (IC502)



ELECTRICAL CHARACTERISTICS (refer to Figure 1 on page 3)

$T_{\text{amb}} = 25^\circ\text{C}$ unless otherwise specified, $V_{\text{cc}} = \pm 12\text{V}$, $f_{\text{vert}} = 50\text{Hz}$

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
+Vcc	Positive supply range		+10		+18	V
-Vcc	Negative supply range		-18		-10	V
ΔV_{cc}	Maximum recommended difference between +Vcc and $ -V_{\text{cc}} $				± 4	V
$V_{\text{cc, start}}$	Low Vcc detection			± 6.5		V
I_{q}	Quiescent supply current	Input voltage = 0		14		mA
I_{y}	Maximum recommended vertical yoke current				± 1.25	A
I_{13}, I_{12}	Amplifier Input bias current			-0.1		μA
V_{OS}	Output Offset voltage	Note 1	-50		+50	mV
SVR	Supply voltage rejection	Note 2		82		dB
F_{lythr}	Flyback detection threshold (positive slope)	V(14)		1.5		V
F_{lythf}	Flyback detection threshold (negative slope)	V(14)		0.5		V
P_{d}	Integrated circuit Dissipated power	Note 3		1.1		W
F_{sw}	Switching frequency	$R_{\text{freq}} = 10\text{k}\Omega$	120	140	160	kHz
$F_{\text{sw - op}}$	Switching frequency operative range		100		200	kHz
R_{freq}	Frequency controller resistor range	Pin 10	7	10	14	$\text{k}\Omega$

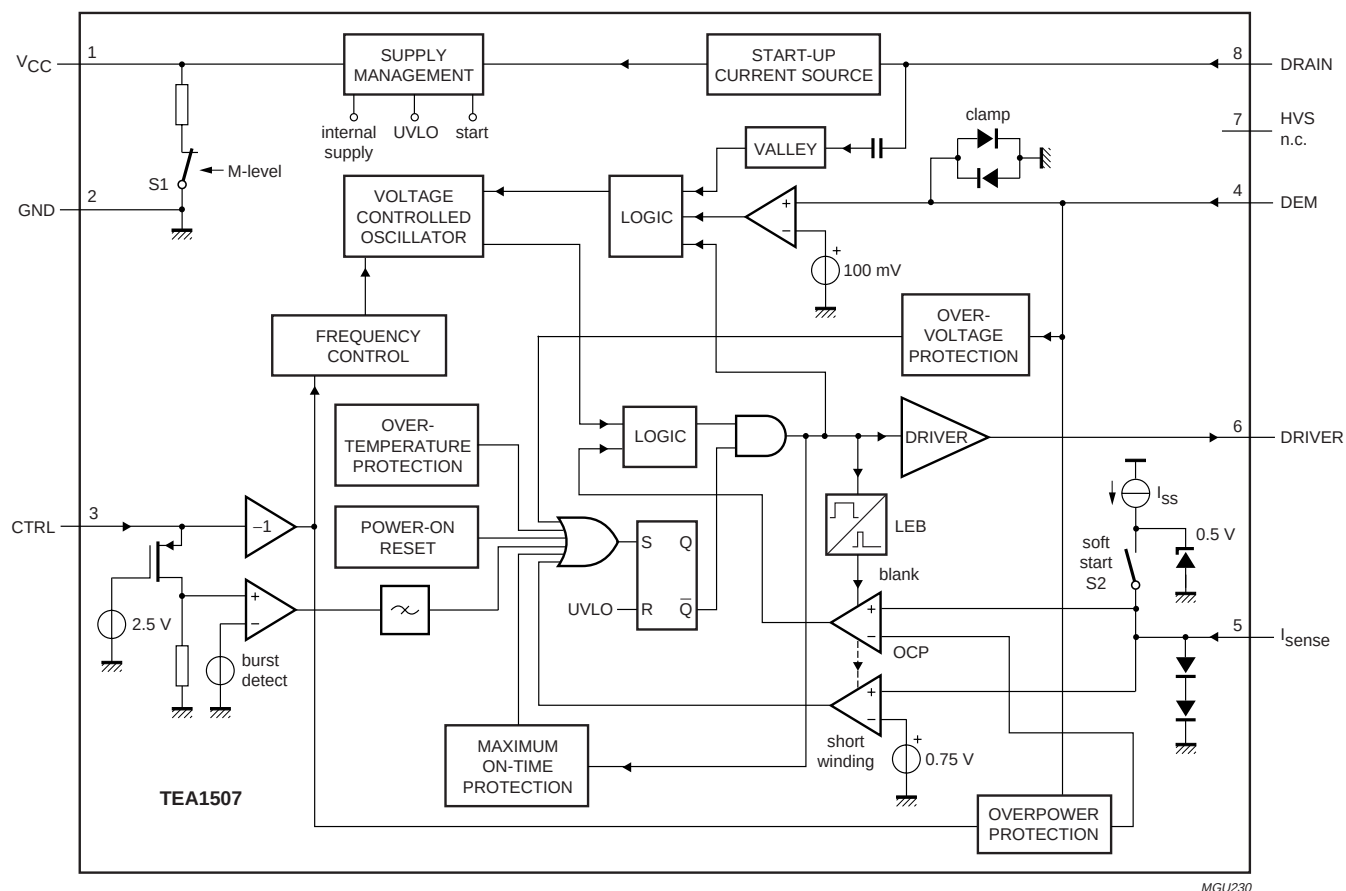
Note: 1 Input voltage = 0, measured after the filter (e.g. across the 470 nF filter capacitor)

Note: 2 Supply rejection of the positive or negative power supply. Vcc ripple = 1Vpp, f = 100Hz, measured on the sense resistor.

Note: 3 Power dissipated in the circuit in the case of the application from Figure 1 and the current in the deflection yoke adjusted to 2.5App. The corresponding power dissipated in the vertical deflection yoke is 2.8W.

TEA1507 (IC701)

Block Diagram



PINNING

SYMBOL	PIN	DESCRIPTION
V _{CC}	1	supply voltage
GND	2	ground
CTRL	3	control input
DEM	4	input from auxiliary winding for demagnetization timing, OVP and OPP
I _{sense}	5	programmable current sense input
DRIVER	6	gate driver output
HVS	7	high voltage safety spacer, not connected
DRAIN	8	drain of external MOS switch, input for start-up current and valley sensing

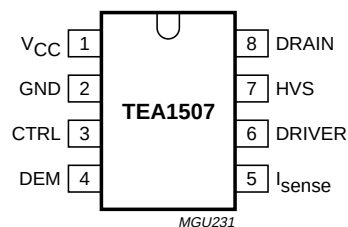


Fig.3 Pin configuration.

TEA1507 (IC701)

CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$; $V_{CC} = 15\text{ V}$; all voltages are measured with respect to ground (pin 2); currents are positive when flowing into the IC; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Start-up current source (pin 8)						
$I_{i(DRAIN)}$	supply current drawn from drain pin	$V_{CC} = 0\text{ V}$; $V_{DRAIN} > 100\text{ V}$	1.0	1.2	1.4	mA
		with auxiliary supply; $V_{DRAIN} > 100\text{ V}$	–	100	300	μA
BV_{DSS}	breakdown voltage		650	–	–	V
M-level	mains-dependent operation-enabling level		60	–	100	V
V_{CC} management (pin 1)						
$V_{CC(start)}$	start-up voltage on V_{CC}		10.3	11	11.7	V
$V_{CC(UVLO)}$	under voltage lock-out on V_{CC}		8.1	8.7	9.3	V
$V_{CC(hys)}$	hysteresis voltage on V_{CC}	$V_{CC(start)} - V_{CC(UVLO)}$	2.0	2.3	2.6	V
$I_{i(VCC)H}$	pin V_{CC} charging current	$V_{DRAIN} > 100\text{ V}$; $V_{CC} < 3\text{ V}$	–1.2	–1	–0.8	mA
$I_{i(VCC)L}$	pin V_{CC} charging current	$V_{DRAIN} > 100\text{ V}$; $3\text{ V} < V_{CC} < V_{CC(UVLO)}$	–1.2	–0.75	–0.45	mA
$I_{VCC(restart)}$	pin V_{CC} restart current	$V_{DRAIN} > 100\text{ V}$; $V_{CC(UVLO)} < V_{CC} < V_{CC(start)}$	–650	–550	–450	μA
$I_{CC(operate)}$	supply current under normal operation	no load on pin DRIVER	1.1	1.3	1.5	mA
Demagnetization management (pin 4)						
V_{DEM}	demagnetization comparator threshold voltage on pin DEM		50	100	150	mV
I_{DEM}	pin DEM current	$V_{DEM} = 50\text{ mV}$	–50 ⁽¹⁾	–	0	nA
$V_{clamp(DEM)(neg)}$	negative clamp voltage on pin DEM	at $I_{DEM} = -150\text{ }\mu\text{A}$	–0.5	–0.25	–0.05	V
$V_{clamp(DEM)(pos)}$	positive clamp voltage on pin DEM	at $I_{DEM} = 250\text{ }\mu\text{A}$	0.5	0.7	0.9	V
t_{suppr}	suppression of transformer ringing at start of secondary stroke		1.1	1.5	1.9	μs
Pulse width modulator						
$t_{on(min)}$	minimum on-time		–	t_{leak}	–	ns
$t_{on(max)}$	maximum on-time	latched	40	50	60	μs
Oscillator						
f_{oscL}	oscillator low frequency (fixed frequency)	$V_{CTRL} > 1.5\text{ V}$	5	6.5	8	kHz
f_{oscH}	oscillator high frequency (fixed frequency)	$V_{CTRL} < 1\text{ V}$	145	175	205	kHz
$V_{vco(start)}$	peak voltage at pin I_{sense} , where frequency reduction starts	see Fig.6	–	75	–	mV
$V_{vco(max)}$	peak voltage at pin I_{sense} , where the frequency is equal to f_{oscL}		–	50	–	mV
Duty cycle control (pin 3)						
$V_{CTRL(min)}$	min. voltage on CTRL (max. duty cycle)		–	1.0	–	V
$V_{CTRL(max)}$	max. voltage on CTRL (min. duty cycle)		–	1.5	–	V

TEA1507 (IC701)

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Burst mode standby (pin 3)						
$V_{th(burst)(on)}$	burst mode standby active threshold voltage	at $I_{burst} = 6 \text{ mA}$	3.3	3.8	4.3	V
$I_{th(burst)(on)}$	burst mode standby active current		16	–	–	mA
$I_{th(burst)(off)}$	burst mode standby inactive current		–	–	6	mA
$t_{(burst-blank)}$	burst mode standby blanking time		25	30	35	μs
Valley switch (pin 8)						
$\Delta V/\Delta t_{valley}$	$\Delta V/\Delta t$ for valley recognition		–85	–	+85	V/ μs
$t_{valley-sw-on}$	delay from valley recognition to switch-on		–	150 ⁽¹⁾	–	ns
Current and short winding protection (pin 5)						
$V_{sense(max)}$	maximum source voltage OCP	$\Delta V/\Delta t = 0.1 \text{ V}/\mu\text{s}$	0.48	0.52	0.56	V
$t_{propagation}$	delay from detecting $V_{sense(max)}$ to switch-off	$\Delta V/\Delta t = 0.5 \text{ V}/\mu\text{s}$	–	140	185	ns
V_{swp}	short winding protection voltage		0.83	0.88	0.96	V
t_{leb}	blanking time for current and short winding protection		300	370	440	ns
I_{ss}	soft start current	$V_{sense} < 0.5 \text{ V}$	45	60	75	μA
Overvoltage protection (pin 4)						
$I_{(OVP)(DEM)}$	OVP protection level at pin 4, set by the demagnetization resistor R_{DEM} ; see Section “OverVoltage Protection (OVP)”		54	60	66	μA
Overpower protection (pin 4)						
$I_{(OPP)(DEM)}$	OPP current at pin 4, start of OPP correction. Set by the demagnetization resistor R_{DEM} ; see Section “OverPower Protection (OPP)”		–	–24	–	μA
$I_{(OPP50\%)(DEM)}$	OPP current at pin 4 where maximum source voltage is limited to 0.3 V		–	–100	–	μA
Driver (pin 6)						
I_{source}	source current capability of driver	$V_{CC} = 9.5 \text{ V}; V_{DRIVER} = 2 \text{ V}$	–	–170	–88	mA
I_{sink}	sink current capability of driver	$V_{CC} = 9.5 \text{ V}; V_{DRIVER} = 2 \text{ V}$	–	300	–	mA
		$V_{CC} = 9.5 \text{ V}; V_{DRIVER} = 9.5 \text{ V}$	400	700	–	mA
$V_{o(driver)(max)}$	maximum output voltage of the driver	$V_{CC} > 12 \text{ V}$	–	11.5	12	V
Temperature protection						
$T_{prot(max)}$	maximum temperature threshold		130	140	150	$^{\circ}\text{C}$
$T_{prot(hyst)}$	hysteresis temperature		–	8 ⁽¹⁾	–	$^{\circ}\text{C}$

Note

1. Guaranteed by design.

DESCRIPTION OF SCHEMATIC DIAGRAMS

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.

2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTE:

1. The unit of resistance « ohm » is omitted (K=1000 ohms. M= Megaohm).

2. All resistors are 1/8 watt. unless otherwise noted.

3. All capacitors are μF , unless otherwise noted (P= μF).

IMPORTANT SAFETY NOTE:

PARTS MARKED WITH « $\triangle$ » () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (---) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

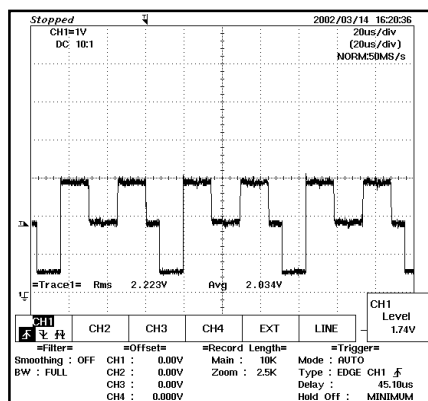
CAUTION

This circuit diagram is original one, therefore there may be slight difference from yours.

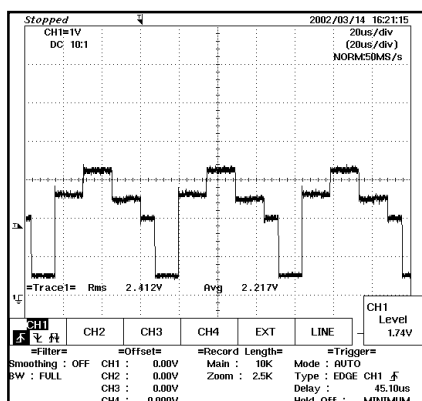
Waveform Measurement Condition:

1. Test Equipment: DIGITAL SLPE LECROY.
2. Test Conditions: CH-12; COLOUR BARS; 70dB FROM RF INPUT
3. TV Condition: PICTURE AND AUDIO : SETTINGS $\rightarrow$ FACTORY PRESETS

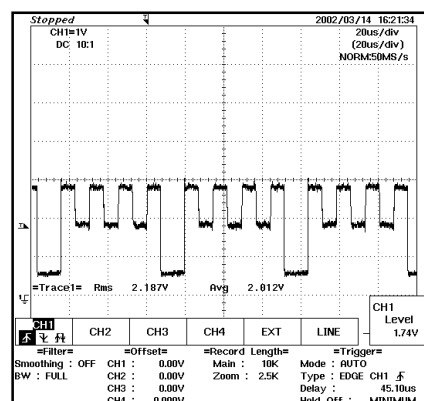
Waveform:



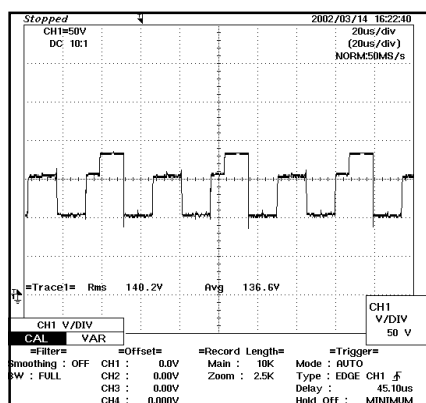
① Pin1 Vp-p= 2.7V



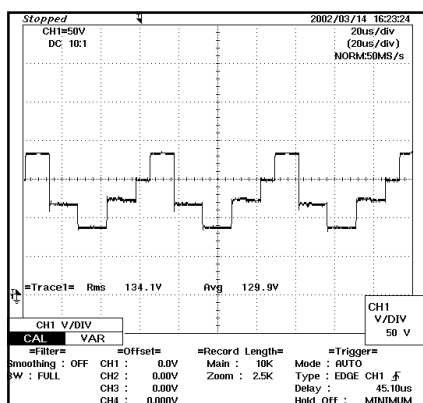
② Pin2 Vp-p= 2.7V



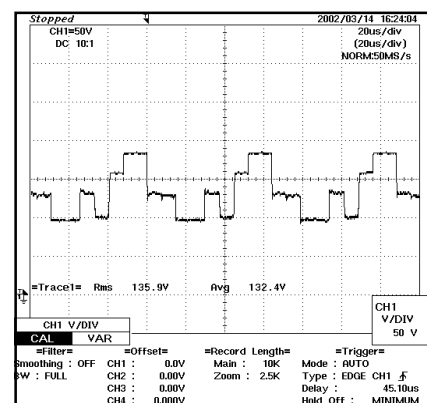
③ Pin3 Vp-p= 2.8V



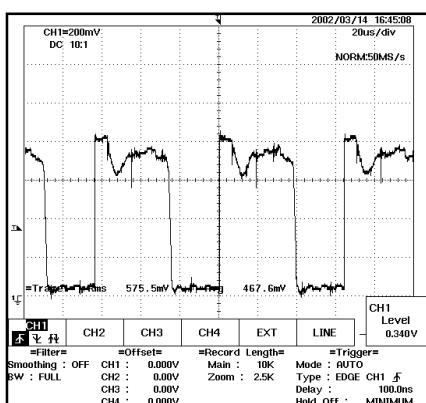
④ Pin4 Vp-p= 100V



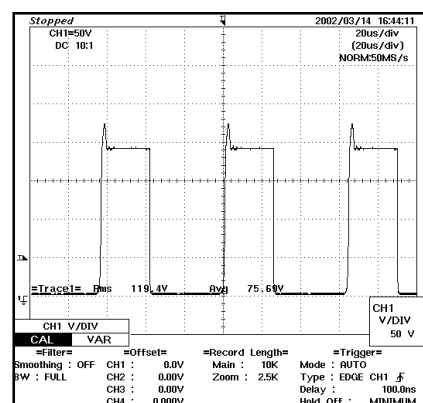
⑤ Pin5 Vp-p= 100V



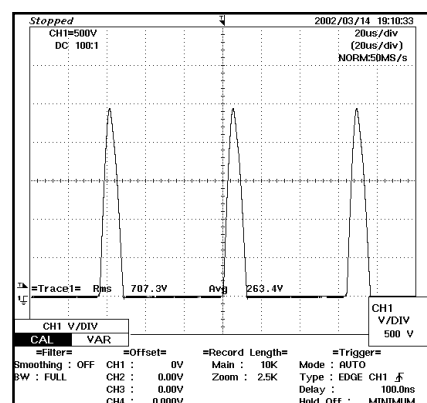
⑥ Pin6 Vp-p= 100V



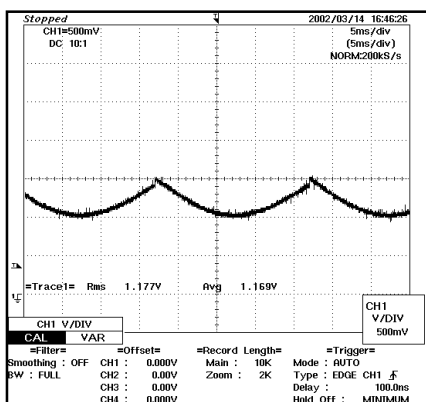
⑦ Pin7 Vp-p= 0.8V



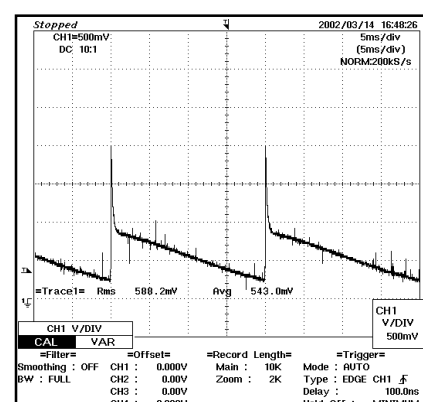
⑧ Pin8 Vp-p= 225V



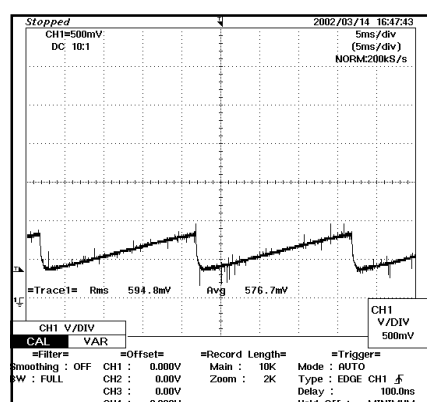
⑨ Pin9 Vp-p=1200V



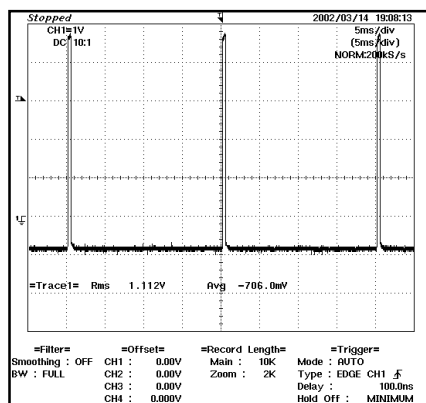
⑩ Pin10 Vp-p= 0.4V



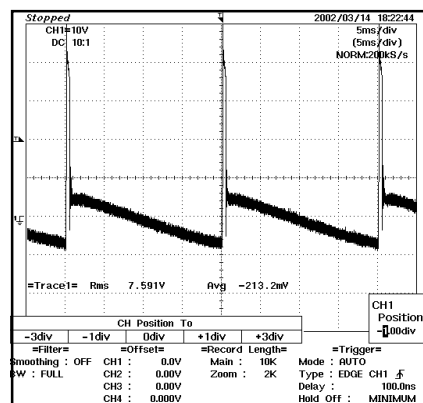
⑪ Pin11 Vp-p= 1.8V



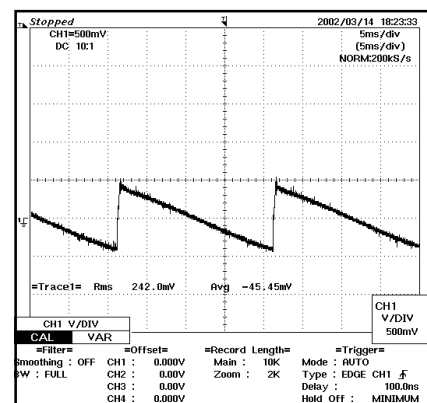
⑫ Pin12 Vp-p= 0.5V



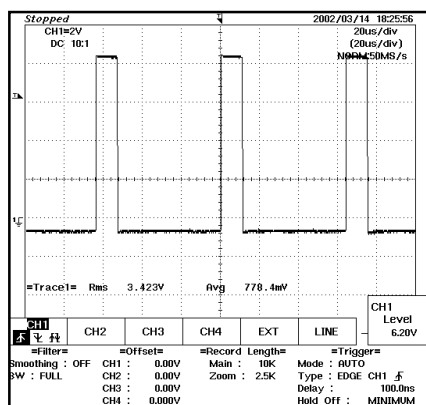
⑬ Pin13 Vp-p=5.6V



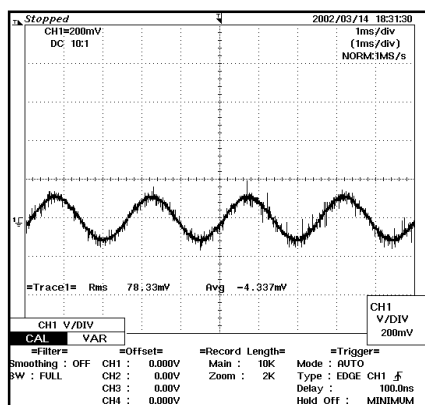
⑭ Pin14 Vp-p= 70V



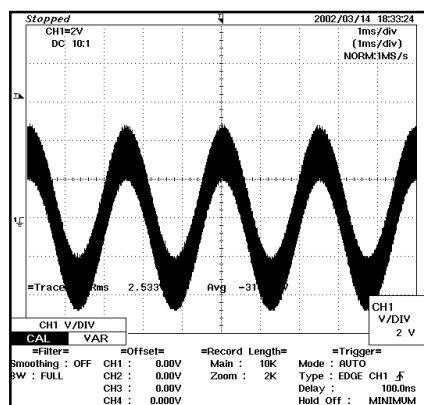
⑮ Pin15 Vp-p= 2.00V



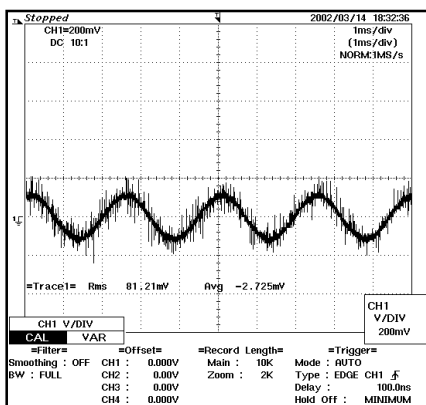
①⑥ Pin16 Vp-p= 9.2V



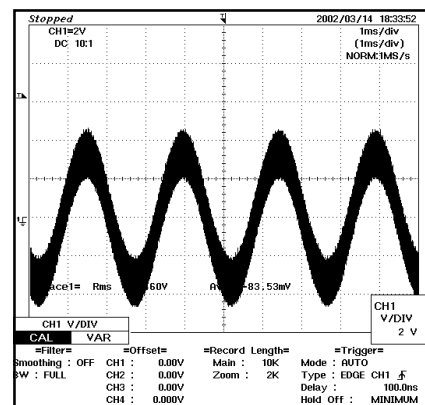
⑪ Pin17 $V_{p-p} = 0.24V$



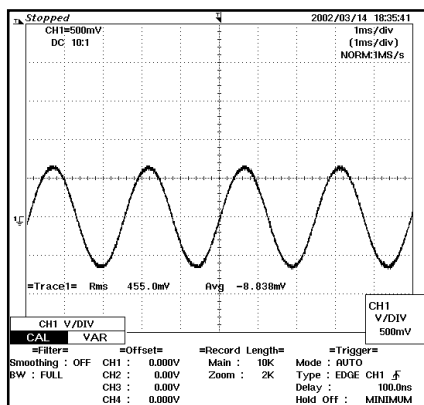
⑮ Pin18 Vp-p= 9.6V



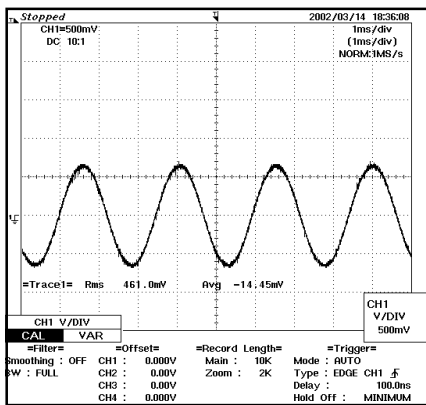
①9 Pin19 Vp-p= 0.2V



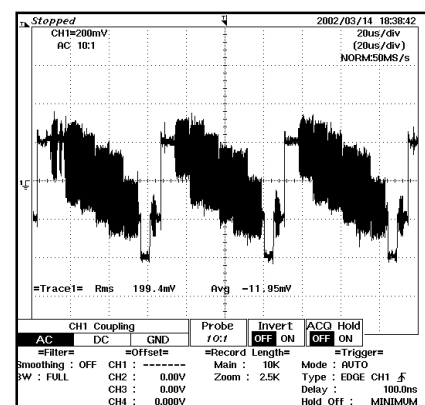
②0 Pin20 Vp-p= 9.2V



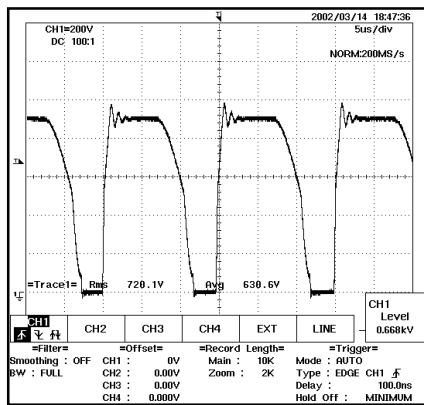
②1 Pin21 Vp-p= 1.4V



②② Pin22 $V_{p-p} = 1.4V$

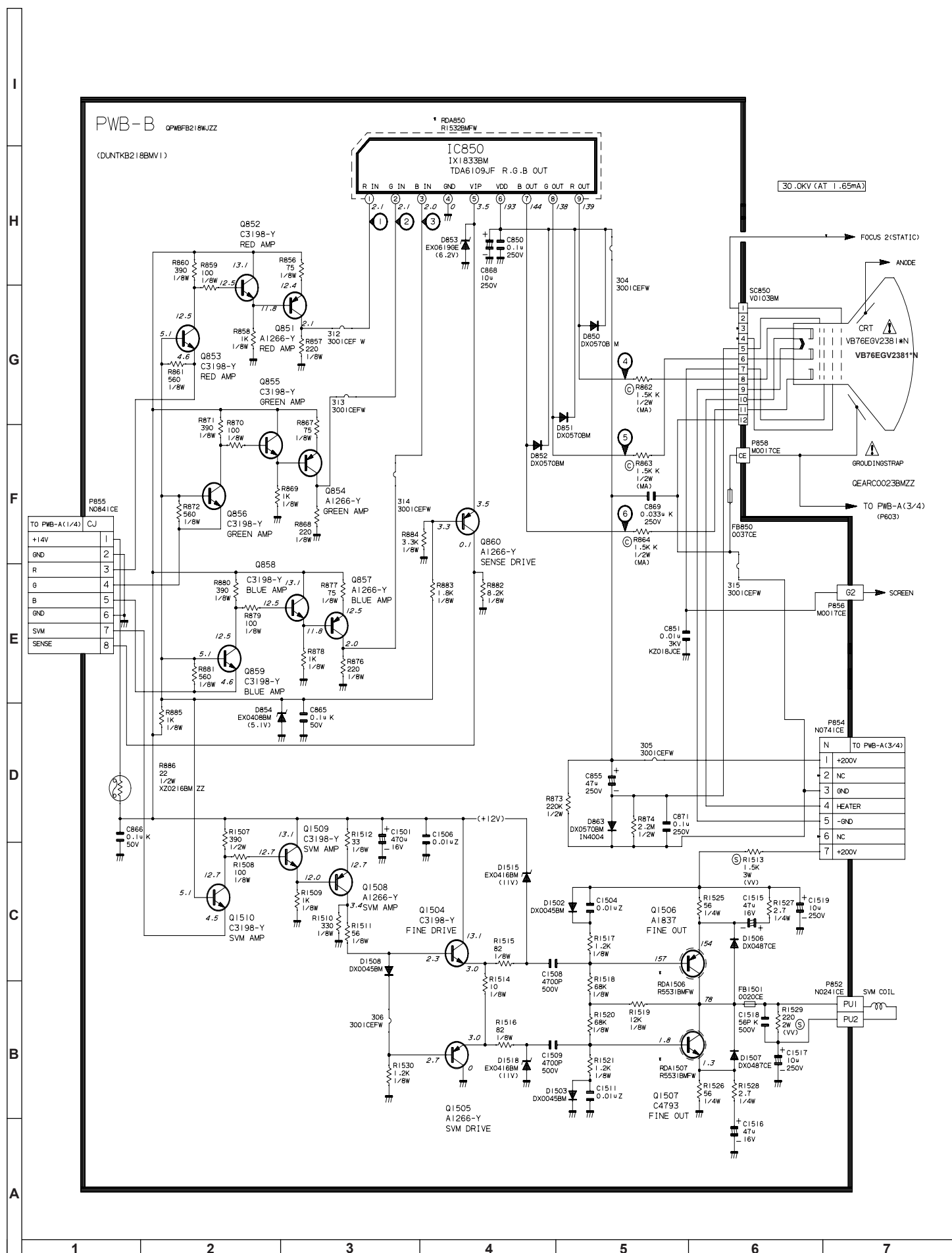


②③ Pin23 Vp-p= 0.7V

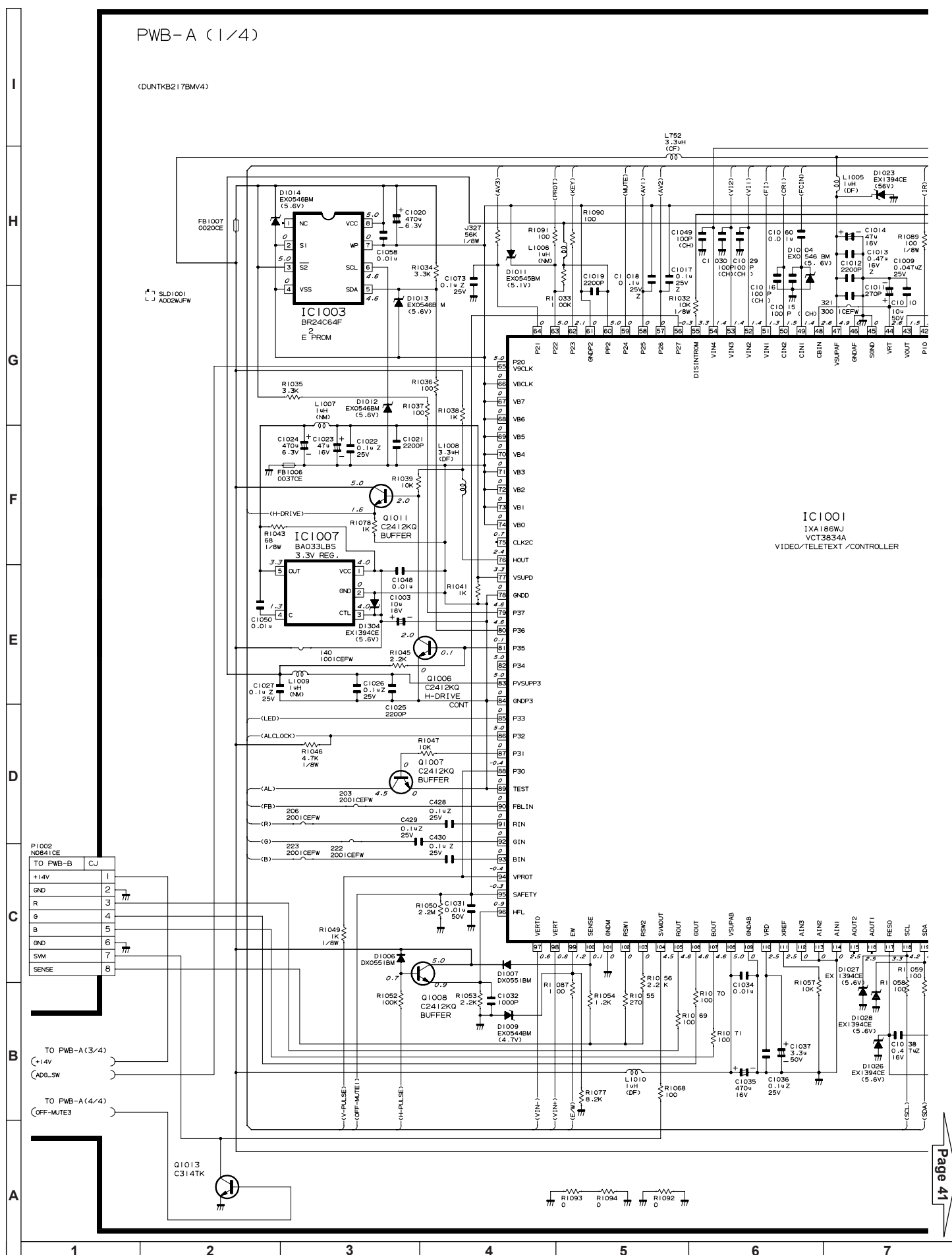


②4 Pin24 Vp-p= 500V

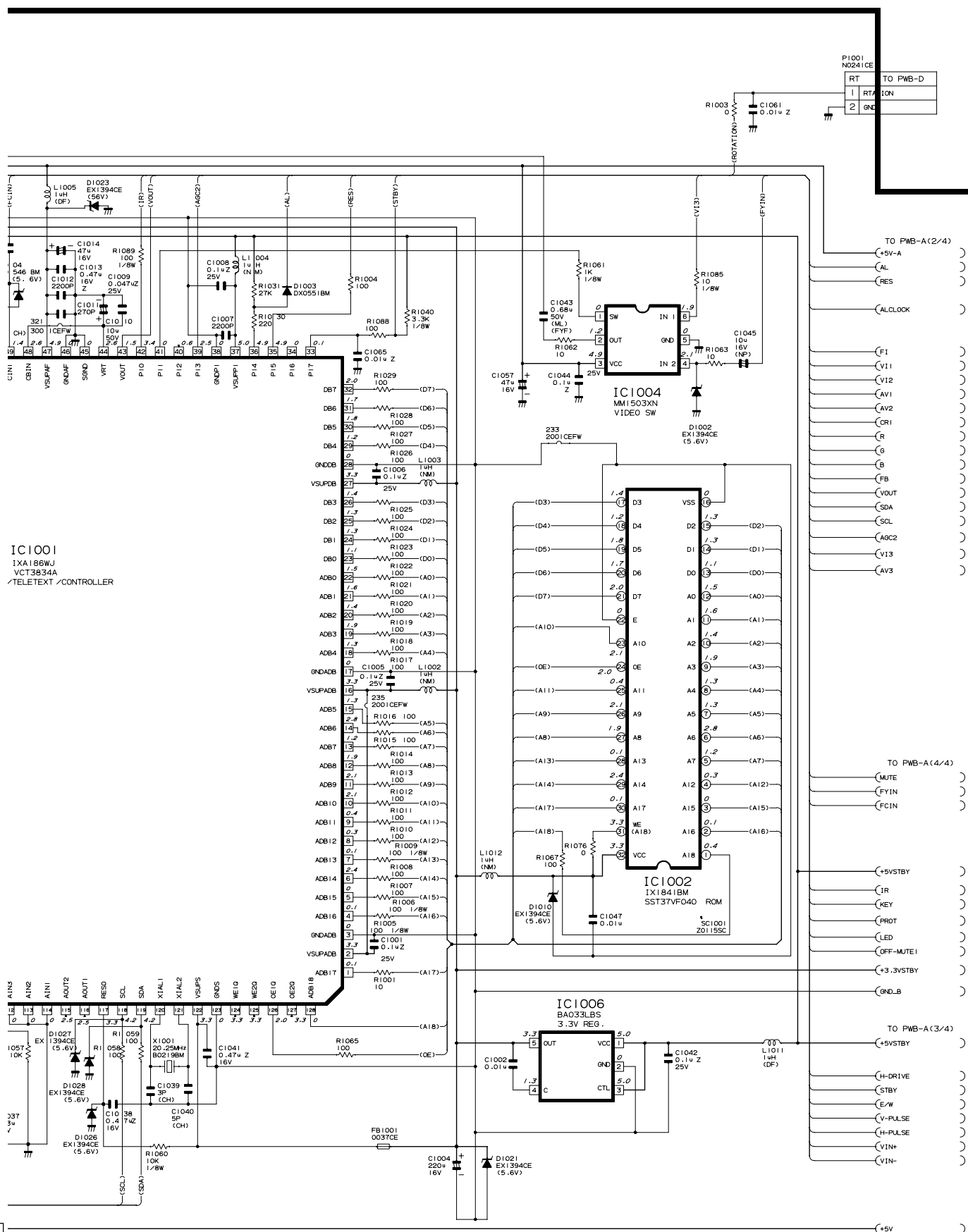
SCHEMATIC DIAGRAM OF CRT UNIT (FB218N2)



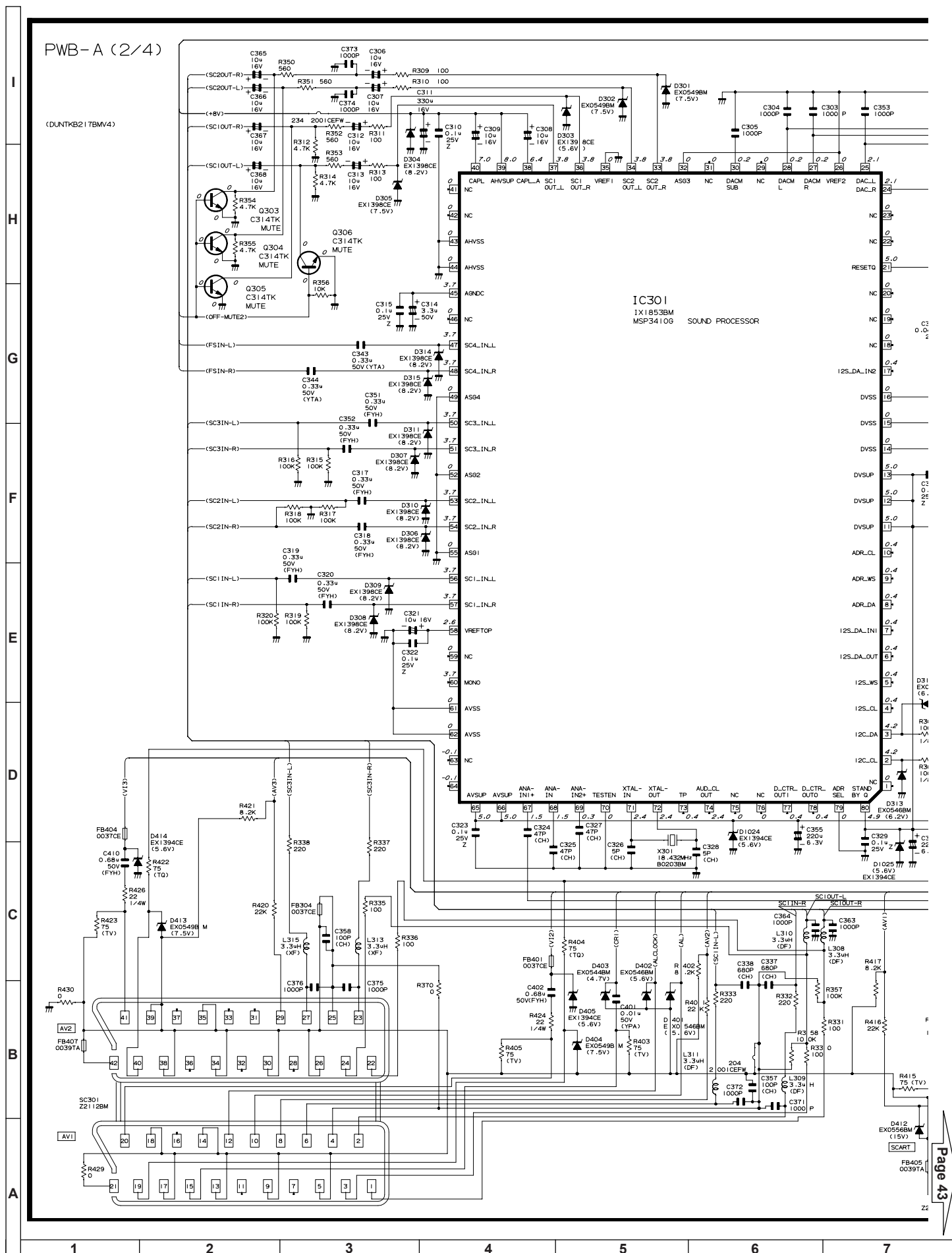
SCHEMATIC DIAGRAM OF MAIN 1/4 (FB217N5)



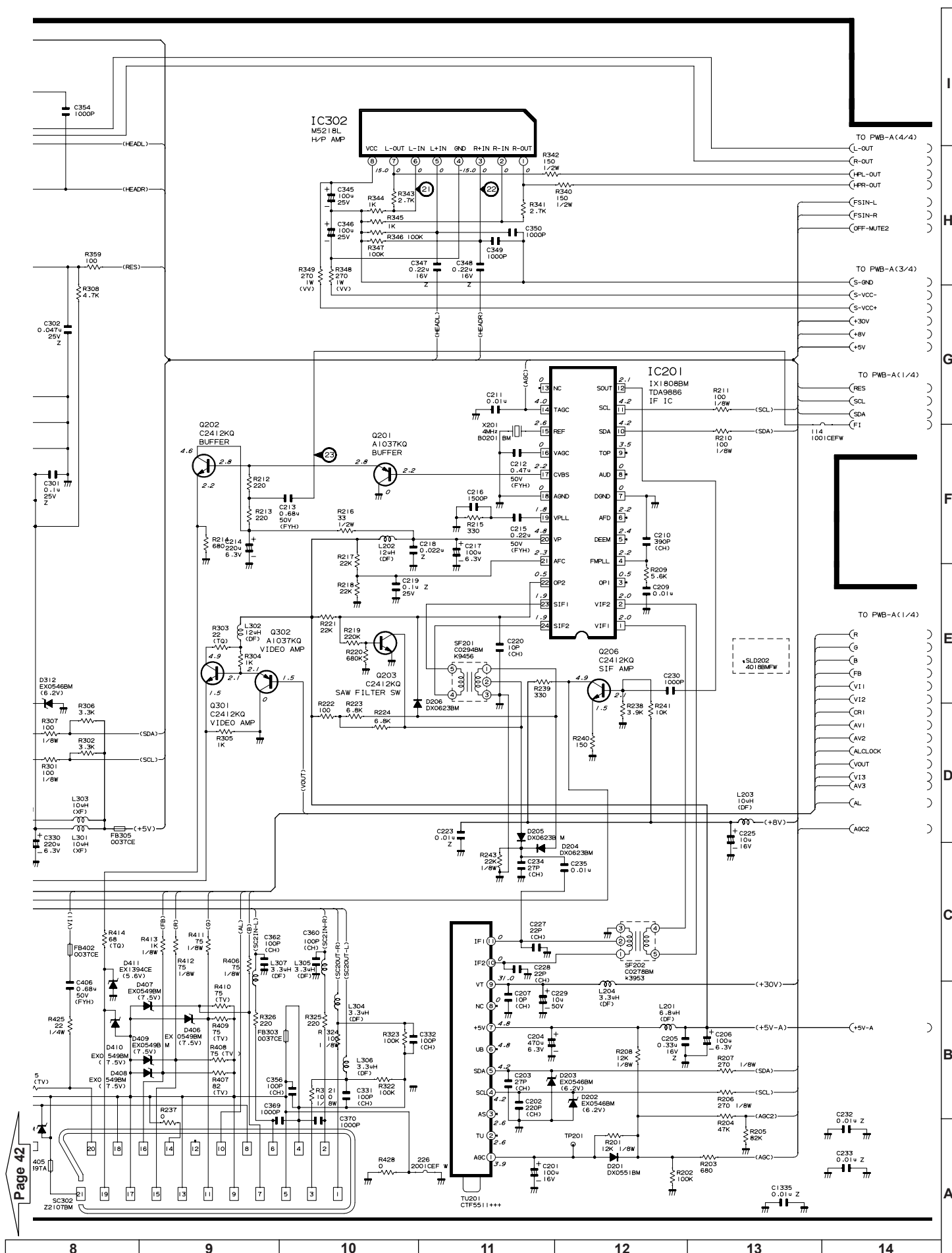
SCHEMATIC DIAGRAM OF MAIN 1/4 (FB217N5)



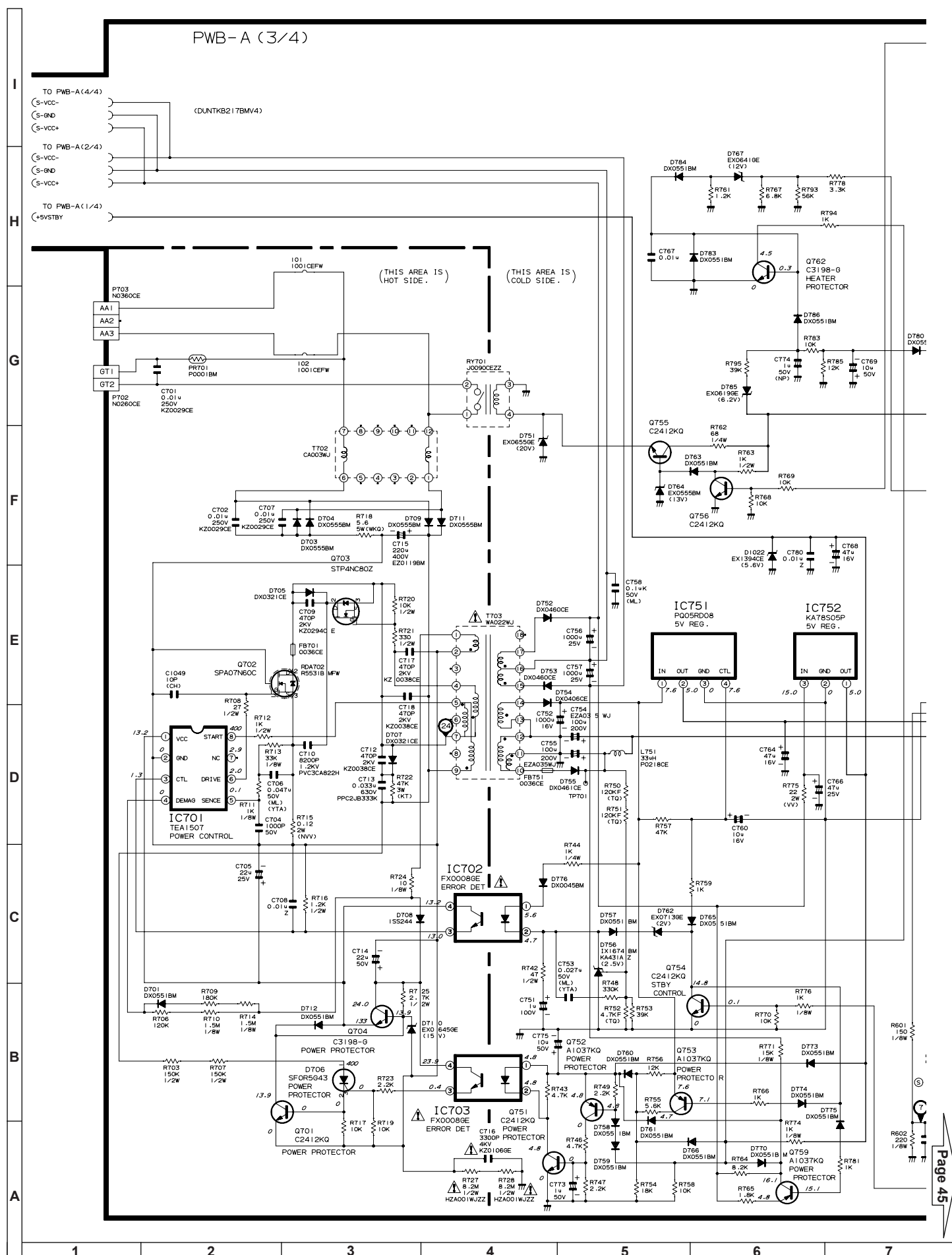
SCHEMATIC DIAGRAM OF MAIN 2/4 (FB217N5)



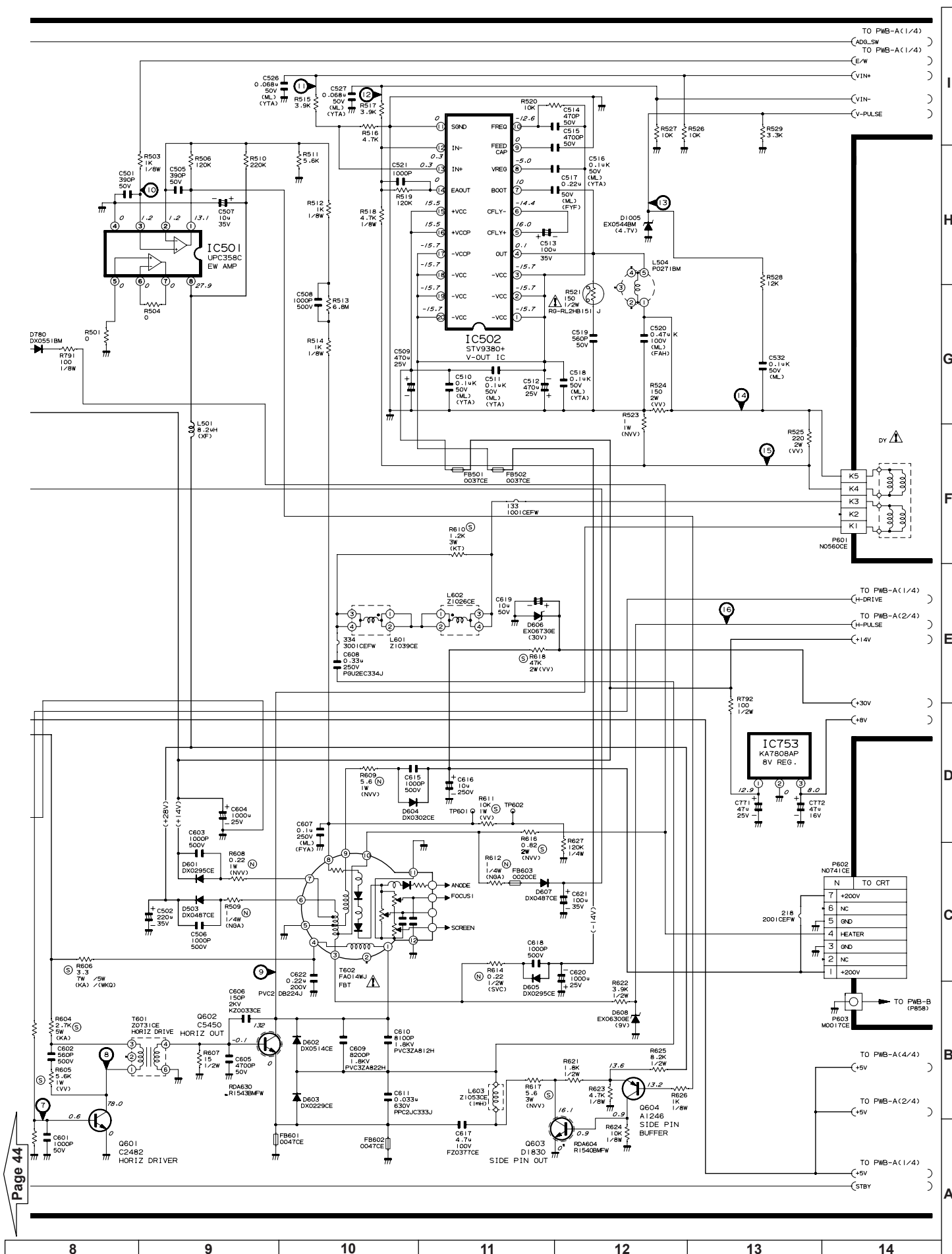
SCHEMATIC DIAGRAM OF MAIN 2/4 (FB217N5)



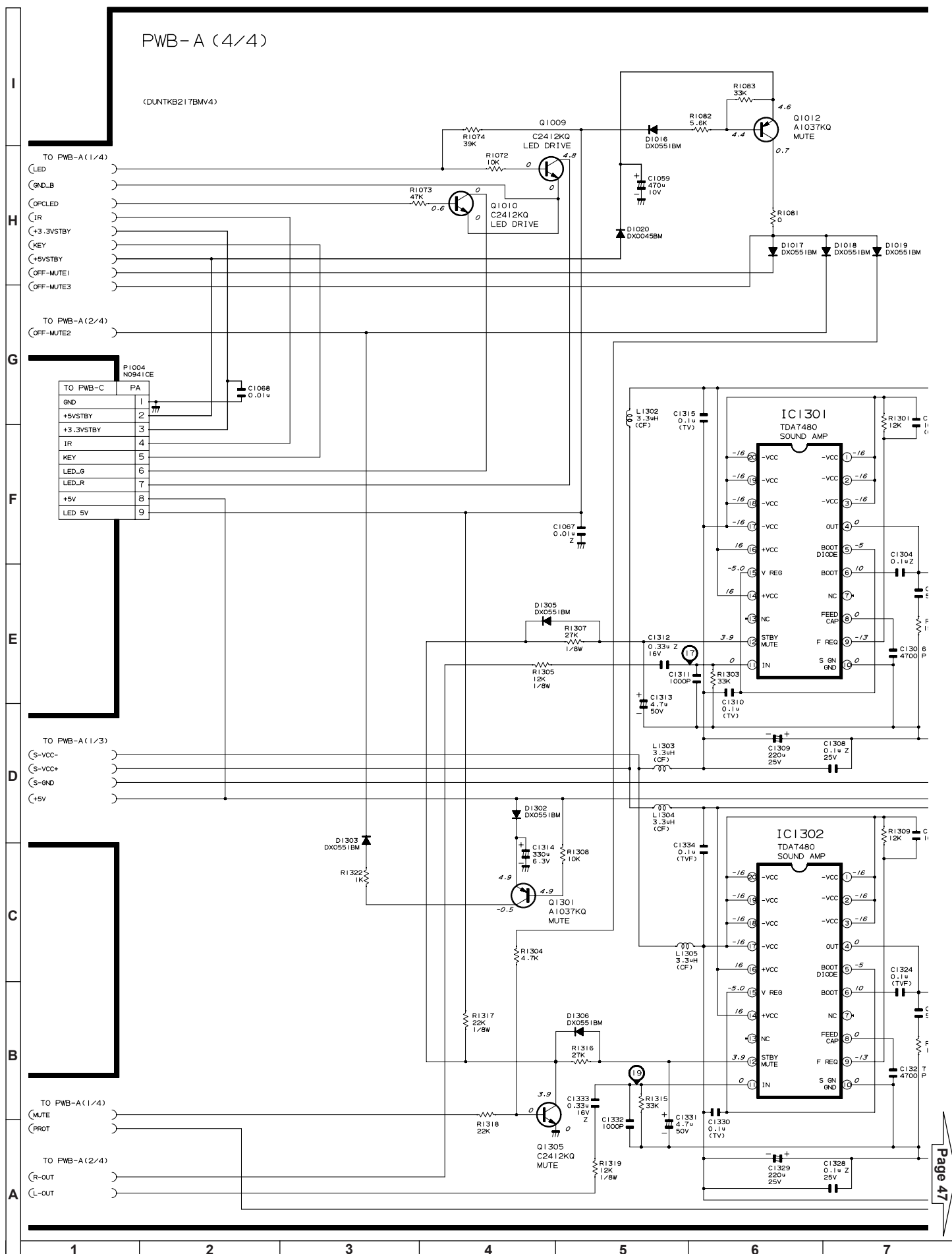
SCHEMATIC DIAGRAM OF MAIN 3/4 (FB217N5)



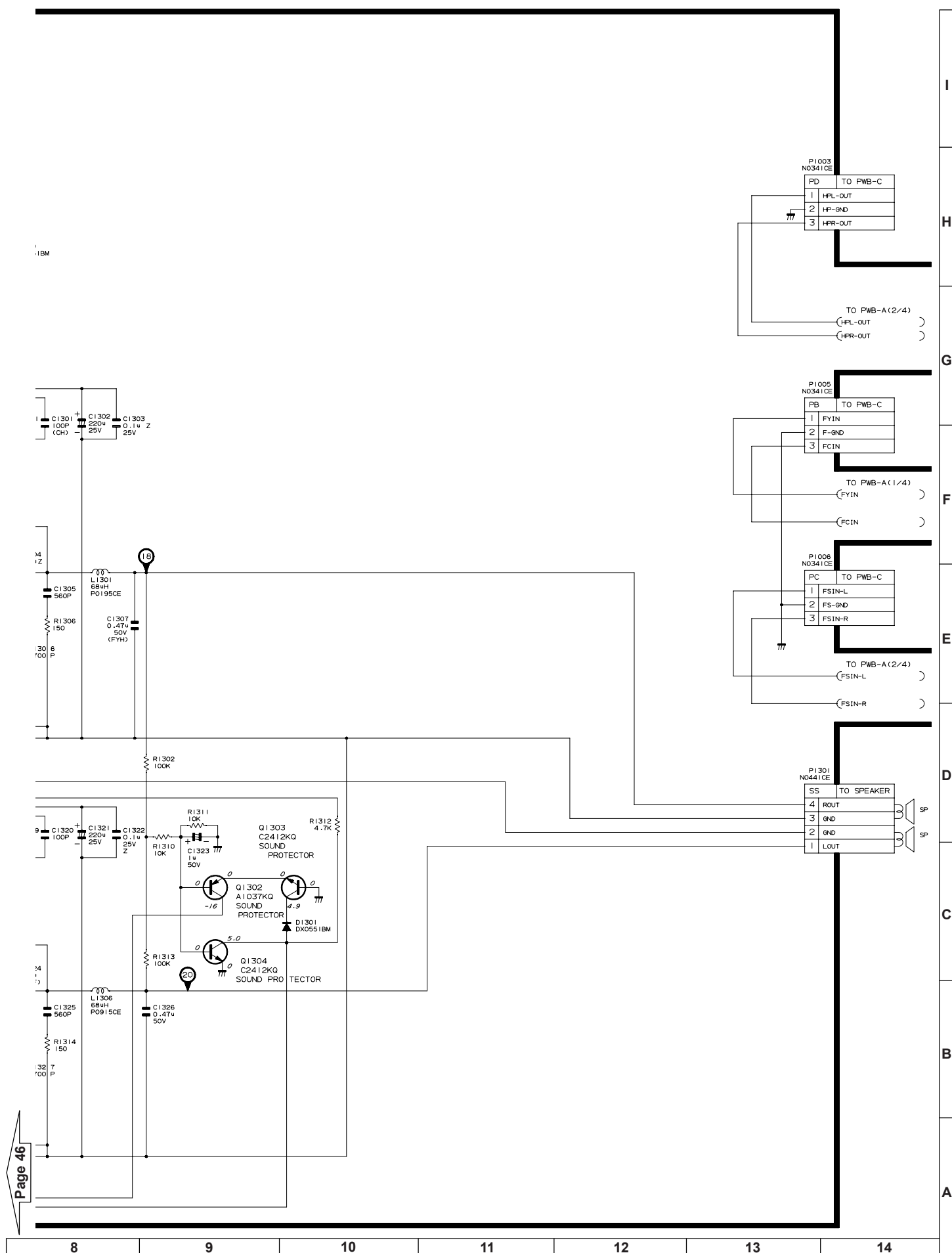
SCHEMATIC DIAGRAM OF MAIN 3/4 (FB217N5)



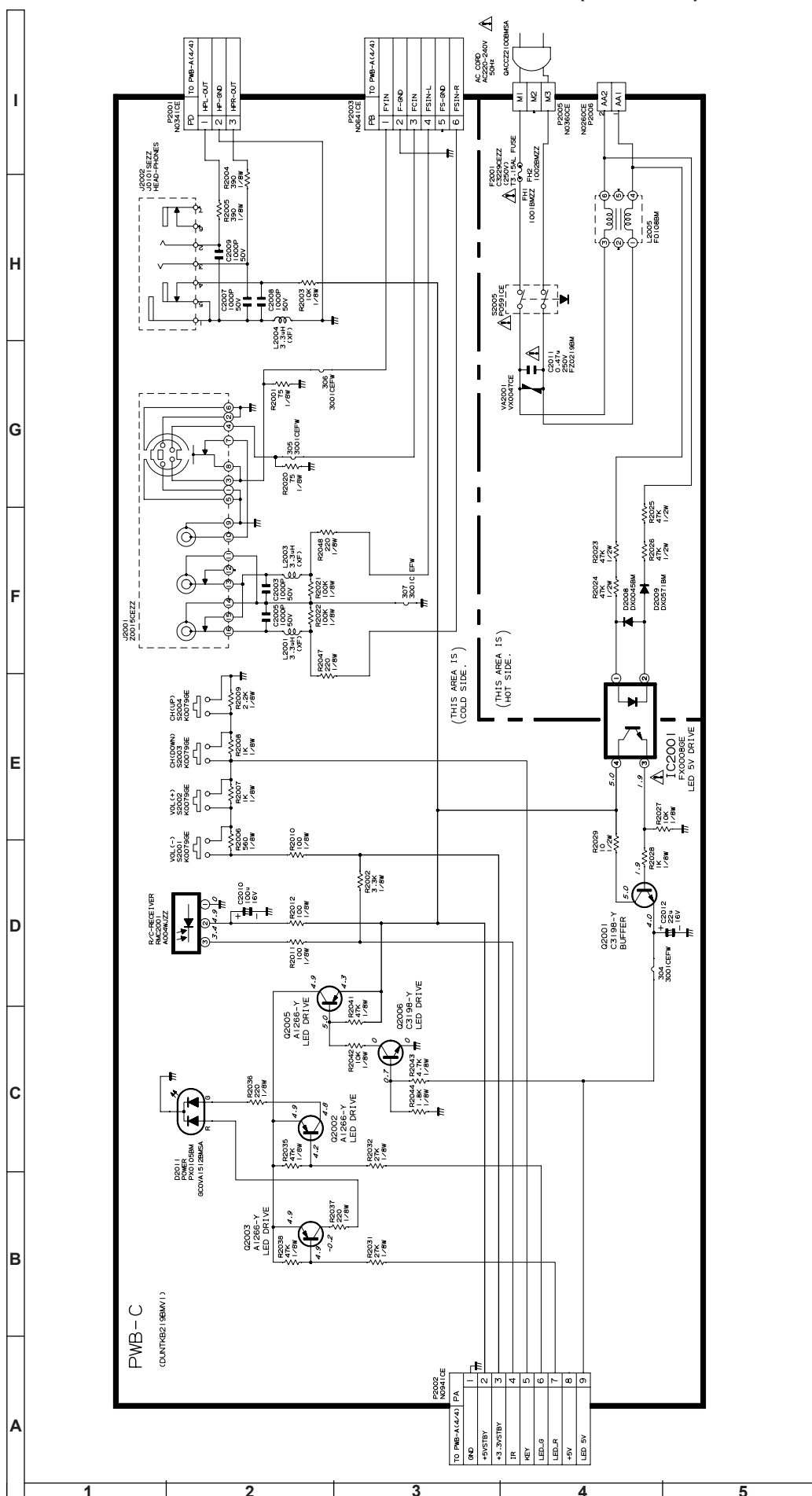
SCHEMATIC DIAGRAM OF MAIN 4/4 (FB217N5)



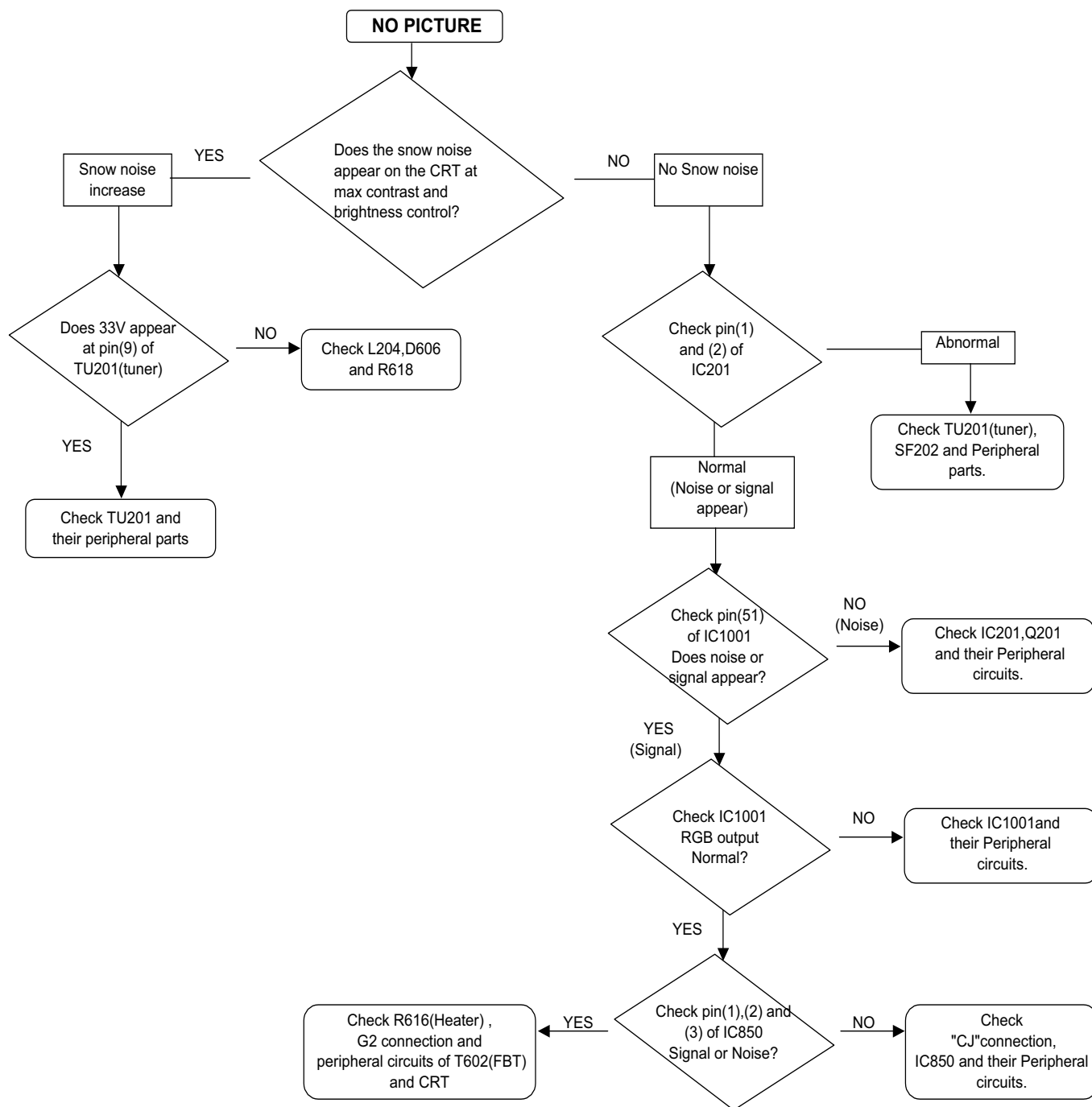
SCHEMATIC DIAGRAM OF MAIN 4/4 (FB217N5)



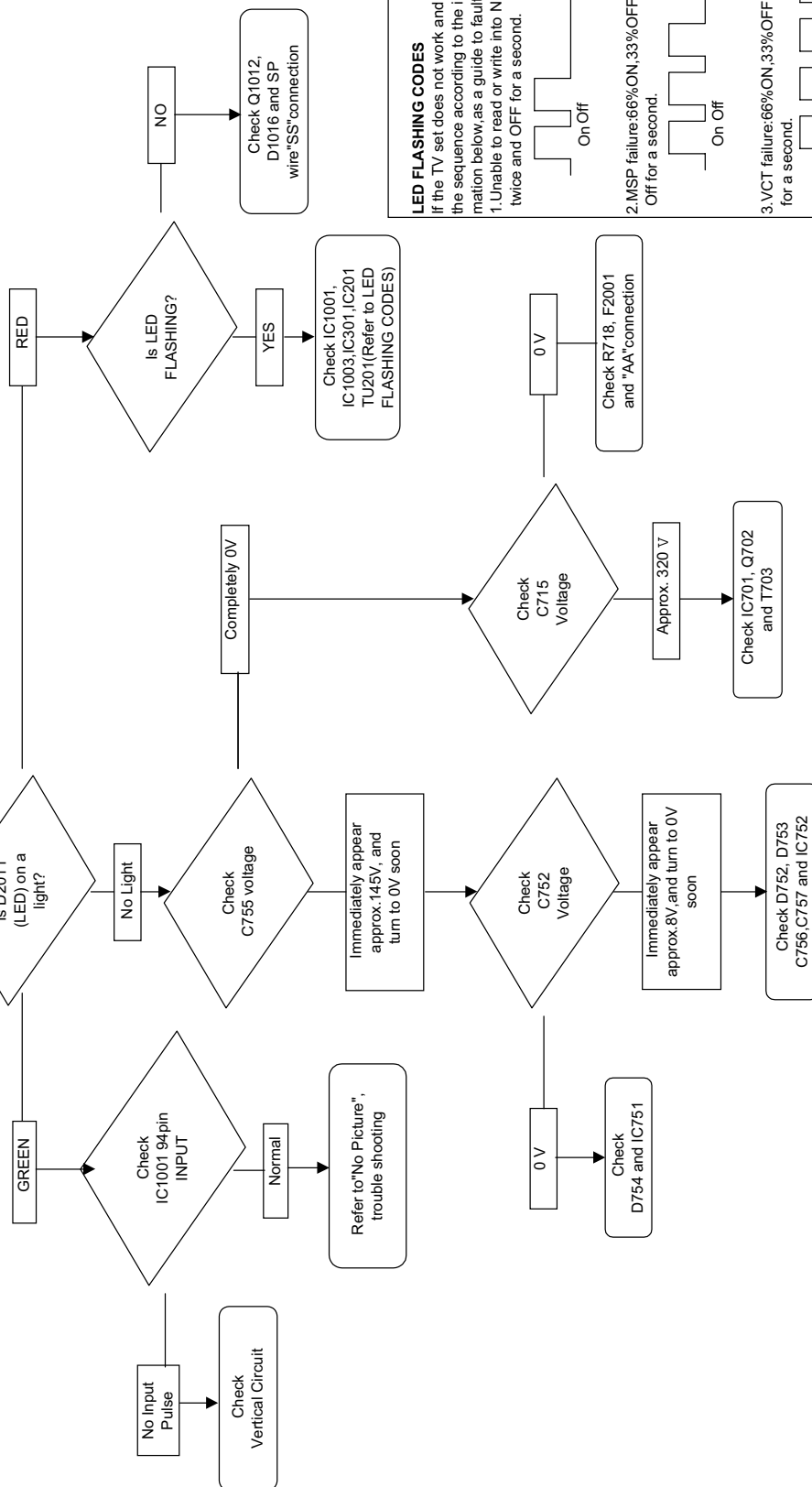
SCHEMATIC DIAGRAM OF CONTROL UNIT (FB219N1)



TROUBLESHOOTING TABLES



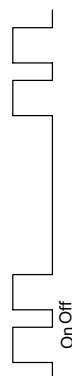
NO FUNCTION(NO SOUND AND NO PICTURE)



LED FLASHING CODES

If the TV set does not work and the power indicator is flashing, follow the sequence below as a guide to fault finding.

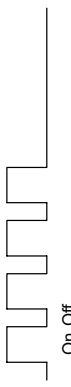
1. Unable to read or write into NMV: 66% ON, 33% OFF twice and OFF for a second.

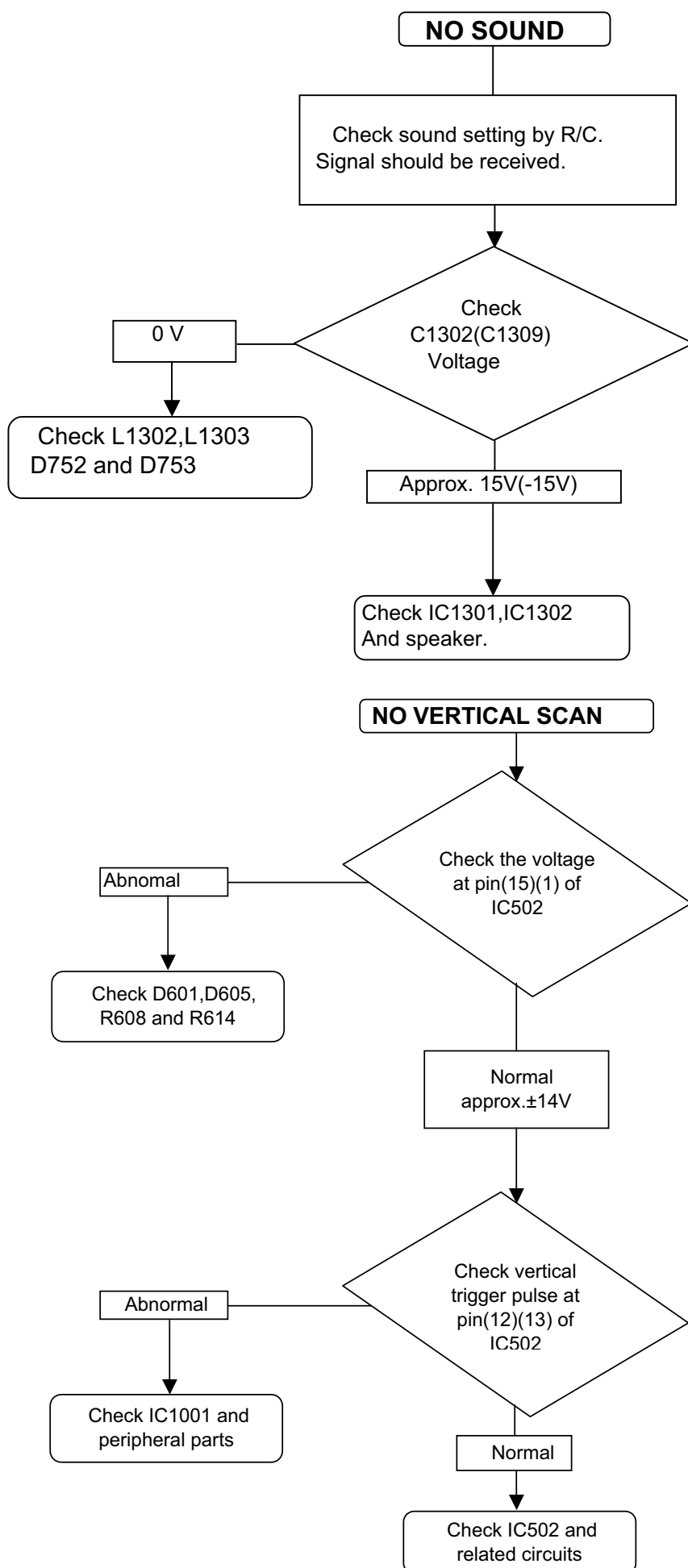


2. MSP failure: 66% ON, 33% OFF for three times and Off for a second.



3. VCT failure: 66% ON, 33% OFF for four times and OFF for a second.





PARTS LISTING

REPLACEMENT PARTS

Replacement parts which have special safety characteristics are identified in this manual. Electrical components having such features are identified by in the Replacement Parts Listing.

The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended is not permitted. Replacement parts not shown in this service manual may create shock fire, or other hazards.

HOW TO ORDER REPLACEMENT PARTS

To have your order completed promptly and correctly please supply the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK *:		SPARE PARTS	DELIVERY SECTION		
REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE	
PICTURE TUBE					
△		VB76EGV2381*N	32*SF50HZSingleF W76EGV023X815+DYCONNECT	S CN	DK
MISCELLANEOUS PARTS					
△		RCILG0418BMZZ	DEGUSS.COIL ATN01121952 32**16:9 NUCTOR	S AS	AZ
		LHLD3009CEFN	ADG COIL HOLDER	S AA	AB
		LHLDW1514BM00	HOLDER UNEX 2233	S AA	AA
		QEARC0023BMZZ	CABLE EARHT 32" DA-100W	S AC	AH
PRINTED WIRING BOARDS (Not replacement item)					
		DUNTKB217CJV4	ADJUST CHASSIS 32JW73E	S BR	CK
		DUNTKB218BMV1	CRT UNIT INS HAND 32JW73H	S AT	BE
		DUNTKB219BMV1	CONTROL INS HAND 32JW73H	S AR	BC
PWB-A MOTHER UNIT					
TUNER					
TU 0201		VTUCTF5511+++	TUNER THOMSON	S AN	AZ
INTEGRATED CIRCUITS					
IC 0201		RH-IX1808BMZZ	IC TDA9886TS PHILIPS	S AG	AS
IC 0301		RH-IX1853BMZZ	IC MSP3410G-QA-B8 MICRONAS	S AR	BC
IC 0302		VHIM5218L/-1	IC M5218L	S AA	AD
IC 0501		VHIUPC358C/-1	IC UPC358C NEC	S AE	AE
IC 0502		VHISTV9380+-1	IC STV9380 V OUT ST	S AE	AP
IC 0701		WHITEA1507/-1	IC TEA1507P/N1 PHILIPS	S AC	AH
△ IC 0702		RH-FX0008GEZZ	P/COUPLER RANK-S SHARP	S AA	AD
△ IC 0703		RH-FX0008GEZZ	P/COUPLER RANK-S SHARP	S AA	AD
IC 0751		VHIPQ05RD08-1	IC PQ05RD08 SHARP	S AC	AH
IC 0752		VHIKA7850SP-1	IC KA7850SP KOREA	S AA	AD
IC 0753		VHIKA7808AP-1	IC KIA7808API KOREA ELECTRONICS	S AA	AE
IC 1001		RH-IXA186WJZZ	IC VCT3834A MICRONAS	S AW	BH
IC 1002		CH-IX1841CJE6	EPROM SET 4M 3V FLASH 32JW73E	S AM	AY
IC 1003		VHIBR24C64F-1	NVM ROHM 64KBIT BR24C64	S AC	AH
IC 1004		VHIMM1503XN-1	IC MM1503XNRE MITSUMI	S AA	AE
IC 1006		VHIBA033LBS-1	IC BA033LBSG 3.3V REG ROHM	S AB	AF
IC 1007		VHIBA033LBS-1	IC BA033LBSG 3.3V REG ROHM	S AB	AF
IC 1301		VHITDA7480/-1	IC TDA7480 THOMSON	S AF	AK
IC 1302		VHITDA7480/-1	IC TDA7480 THOMSON	S AF	AK
TRANSISTORS					
Q 0201		VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 0202		VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0203		VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0206		VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0301		VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0302		VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 0303		VSDTC314TK/-1	TRT DTC314TKT146 ROHM	S AA	AB
Q 0304		VSDTC314TK/-1	TRT DTC314TKT146 ROHM	S AA	AB
Q 0305		VSDTC314TK/-1	TRT DTC314TKT146 ROHM	S AA	AB
Q 0306		VSDTC314TK/-1	TRT DTC314TKT146 ROHM	S AA	AB
Q 0601		VS2SC2482/-1	TRT 2SC2482 TOSHIBA	S AA	AC
Q 0602		VS2SC5450/1E	TRT 2SC5450-SH4-RG SANYO	S AF	AQ
Q 0603		VS2SD1830/1E	TRT S2D1830-CB11 SANYO	S AB	AF
Q 0604		VS2SA1246/1E	TRT A1246 SANYO	S AA	AB
Q 0701		VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0702		VSSPA07N60C-1	FET SPA07N60C2.A INFINEON	S AD	AM
Q 0703		VSSTP4NC80Z1E	MOS FET STP4NC80ZFP TOMEN	S AC	AH

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
Q 0704	VS2SC3198-G-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0751	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0752	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 0753	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 0754	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0755	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0756	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 0759	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 0762	VS2SC3198-G-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 1006	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1007	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1008	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1009	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1010	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1011	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1012	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 1013	VSDTC314TK/-1	TRT DTC314TKT146 ROHM	S AA	AB
Q 1301	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 1302	VS2SA1037KQ-1	TRT BC807 SMD	S AA	AA
Q 1303	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1304	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
Q 1305	VS2SC2412KQ-1	TRT 2SC2412 ROHM	S AA	AA
DIODES				
D 0201	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0202	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0203	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0204	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S AA	AB
D 0205	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S AA	AB
D 0206	RH-DX0623BMZZ	DIODE BA591 SMD PHILIPS	S AA	AB
D 0301	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0302	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0303	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0304	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0305	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0306	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0307	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0308	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0309	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0310	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0311	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0312	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0313	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0314	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0315	RH-EX1398CEZZ	ZENER DIODE UDZSTE-178.2B WAKO	S AA	AB
D 0401	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0402	RH-EX0546BMZZ	ZENER DIODE TZMCSV6 TFK SMD	S AA	AA
D 0403	RH-EX0544BMZZ	ZENER DIODE TZMCAV7 TFK SMD	S AA	AA
D 0404	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0405	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 0406	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0407	RH-EX0549BMZZ	ZENER DIODE TZMCAV7 TFK SMD	S AA	AA
D 0408	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0409	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0410	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0411	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 0412	RH-EX0556BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0413	RH-EX0549BMZZ	ZENER DIODE TZMCTV5 TFK SMD	S AA	AA
D 0414	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 0603	RH-DX0487CEZZ	DIODE 1SR153-400T-31-A ROHM	S AA	AB
D 0601	RH-DX0295CEZZ	DIODE RU3AM LF-A5 600V/1.5A/0.4 SANKEN	S AA	AC
D 0602	RH-DX0514CEZZ	DIODE RS3FS PREFOR SANKEN	S AB	AF
D 0603	RH-DX0229CEZZ	DIODE RU4AM SANKEN	S AA	AA
D 0604	RH-DX0302CEZZ	DIODE UZA	S AA	AB
D 0605	RH-DX0295CEZZ	DIODE RU3AM LF-A5 600V/1.5A/0.4 SANKEN	S AA	AC
D 0606	RH-EX0673GEZZ	ZENER DIODE MTZJ3J0DT ROHM	S AA	AA
D 0607	RH-DX0487CEZZ	DIODE 1SR153-400T-31-A ROHM	S AA	AB
D 0608	RH-EX0630GEZZ	ZENER DIODE	S AA	AA
D 0701	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0703	RH-DX0555BMZZ	DIODE RF2005 FAGOR	S AA	AB
D 0704	RH-DX0555BMZZ	DIODE RF2005 FAGOR	S AA	AB
D 0705	RH-DX0321CEZZ	DIODE EG01CV1 SANKEN	S AA	AD
D 0706	VHSSFOR5G43-1	THYRISTOR SF0R5G43(N) TOSHIBA	S AA	AD
D 0707	RH-DX0321CEZZ	DIODE EG01CV1 SANKEN	S AA	AD
D 0708	VHD1SS244/-1	SW DIODE 1SS244T-72	S AA	AA
D 0709	RH-DX0555BMZZ	DIODE RF2005 FAGOR	S AA	AB
D 0710	RH-EX0645GEZZ	ZENER DIODE	S AA	AA
D 0711	RH-DX0555BMZZ	DIODE RF2005 FAGOR	S AA	AA
D 0712	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
D 0751	RH-EX0655GEZZ	ZENER DIODE MTJ20BT ROHM	S AA	AA
D 0752	RH-DX0460CEZZ	DIODE RU30ZLF0140-302 SANKEN	S AA	AD
D 0753	RH-DX0460CEZZ	DIODE RU30ZLF0140-302 SANKEN	S AA	AD
D 0754	RH-DX0406CEZZ	DIODE RK16V SANKEN	S AA	AD
D 0755	RH-DX0461CEZZ	DIODE RU44MLF-M1 SANKEN	S AA	AD
D 0756	RH-IX1674BMZZ	IC KA431AZ SAMSUNG	S AA	AD
D 0757	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0758	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0759	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0760	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0761	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0762	RH-EX0713GEZZ	ZENER DIODE MTJ2J2A ROHM	S AA	AA
D 0763	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0764	RH-EX0555BMZZ	ZENER DIODE TZMC13 TFK SMD	S AA	AA
D 0765	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0766	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0767	RH-EX0641GEZZ	ZENER DIODE MTJ2J12CT ROHM	S AA	AA
D 0770	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0773	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0774	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0775	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0776	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 0780	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0783	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0784	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 0785	RH-EX0619GEZZ	ZENER DIODE 6.2V B3	S AA	AA
D 0786	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1002	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1003	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1004	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S AA	AA
D 1005	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S AA	AA
D 1006	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1007	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1009	RH-EX0544BMZZ	ZENER DIODE TZMC4V7 TFK SMD	S AA	AA
D 1010	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1011	RH-EX0545BMZZ	ZENER DIODE TZMC5V1 TFK SMD	S AA	AA
D 1012	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S AA	AA
D 1013	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S AA	AA
D 1014	RH-EX0546BMZZ	ZENER DIODE TZMC5V6 TFK SMD	S AA	AA
D 1016	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1017	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1018	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1019	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1020	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 1021	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1022	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1023	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1024	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1025	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1026	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1027	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1028	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1301	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1302	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1303	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1304	RH-EX1394CEZZ	ZENER DIODE UDZSTE-175.6B WAKO	S AA	AB
D 1305	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
D 1306	RH-DX0551BMZZ	DIODE LL4148 TFK SMD	S AA	AA
		PACKAGED CIRCUITS		
X 0201	RCRSB0201BMZZ	CRYSTAL 4 MHZ	S AK	AM
X 0301	RCRSB0203BMZZ	CRYSTAL 18.432 MHZ	S AD	AG
X 1001	RCRSB0219BMZZ	CRYSTAL 20.25 HMZ	S AG	AH
		COILS		
L 0201	VP-DF6R8K0000	PEAK COIL 6.8UH 10%	S AA	AA
L 0202	VP-DF120K0000	PEAK COIL 12UH 10%	S AA	AA
L 0203	VP-DF100K0000	PEAK COIL 10UH 10%	S AA	AA
L 0204	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0301	VP-XF100K0000	PEAK COIL 10UH 10% 1/8W	S AA	AA
L 0302	VP-DF120K0000	PEAK COIL 12UH 10%	S AA	AA
L 0303	VP-XF100K0000	PEAK COIL 10UH 10% 1/8W	S AA	AA
L 0304	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0305	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0306	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0307	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0308	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0309	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
L 0310	VP-DF3R3K0000	PEAK COIL 3.3UH 10%	S AB	AB
		CERAMIC FILTERS		
SF 0201	RFILC0294BMZZ	SAW FILTER K9456 EPCOS	S AA	AA
SF 0202	RFILC0278BMZZ	SAW FILTER K3953M SIEMENS	S AK	AM
		TRANSFORMERS		
T 0601	RTRNZ0731CEZZ	H-DRIVE TRANS	S AB	AG
△ T 0602	RTRNFA014WJZZ	FBT BW02862 HITACHI	S AQ	BB
△ T 0702	RTRNC003WJZZ	TRANS.	S AE	AP
△ T 0703	RTRNWA022WJZZ	TRANS WA022WJ SANKEN	S AE	AP
		CAPACITORS		
C 0201	VCEA0A1CW107M	ELEC C 100UF 20% 16V	S AA	AA
C 0202	VCCCCY1HH221J	S. CHIP CAP 220PF/50V TAPED	S AA	AA
C 0203	VCCCCY1HH270J	S. CHIP CAP 27PF/50V (TAPED)	S AA	AA
C 0204	VCEA0A0JW477M	E CAPACITOR 470UF/6.3V 6.3X11	S AA	AA
C 0205	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S AA	AA
C 0206	VCEA0A0JW107M	ELEC C 100UF 20% 6.3V	S AA	AA
C 0207	VCCCCY1HH100D	S. CAPACITOR 10PF/50V	S AA	AA
C 0209	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA
C 0210	VCCCCY1HH391J	GRM39CK 391J 50 (1608)SMD CAPACITOR	S AA	AA
C 0211	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA
C 0212	VCFYFA1HA474J	FILM CAPACITOR 474 MAT	S AA	AB
C 0213	VCFYFA1HA684J	POL FILM C 680NF 5% 50V	S AA	AB
C 0214	VCEA0A0JW227M	E CAPACITOR 220UF/6.3V-5X11	S AA	AA
C 0215	VCFYFA1HA224J	PP FILM C 220NF 5% 50V	S AA	AA
C 0216	VCKYCY1HB152K	GRM39B 152K 50 (1608)SMD CAPACITOR	S AA	AA
C 0217	VCEA0A0JW107M	ELEC C 100UF 20% 6.3V	S AA	AA
C 0218	VCKYCY1HF223Z	SC CAPACITOR 0.022UF 50V TAPED	S AA	AA
C 0219	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0220	VCCCCY1HH100D	S. CAPACITOR 10PF/50V	S AA	AA
C 0223	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S AA	AA
C 0225	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0227	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S AA	AA
C 0228	VCCCCY1HH220J	S. CHIP CAP 22PF/50V TAPED	S AA	AA
C 0229	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S AA	AA
C 0230	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0232	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA
C 0233	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA
C 0234	VCCCCY1HH270J	S. CHIP CAP 27PF/50V (TAPED)	S AA	AA
C 0235	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA
C 0301	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0302	VCKYCY1EF473Z	C CAPACITOR 0.047UF/25V TAPED	S AA	AA
C 0303	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0304	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0305	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0306	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0307	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0308	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0309	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0310	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0311	VCEA0A1CW337M	ELEC C 330UF 20% 16V	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
C 0312	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0313	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0314	VCEA0A1HW335M	ELEC C 3.3UF 20% 50V	S AA	AA
C 0315	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0317	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0318	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0319	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0320	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0321	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0322	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0323	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0324	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S AA	AA
C 0325	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S AA	AA
C 0326	VCCCCY1HH5R0C	S. CAPACITOR TAPED	S AA	AA
C 0327	VCCCCY1HH470J	S. CHIP CAP 47PF/50V (TAPED)	S AA	AA
C 0328	VCCCCY1HH5R0C	S. CAPACITOR TAPED	S AA	AA
C 0329	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0330	VCEA0A0JW227M	E CAPACITOR 220UF/6.3V-5X11	S AA	AA
C 0331	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0332	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0337	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S AA	AA
C 0338	VCCCCY1HH681J	GRM39CK 681J 50 (1608)SMD CAPACITOR	S AA	AA
C 0343	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0344	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0345	VCEA0A1EW107M	E. CAPACITOR 100UF 25V 6.3x11	S AA	AA
C 0346	VCEA0A1EW107M	E. CAPACITOR 100UF 25V 6.3x11	S AA	AA
C 0347	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S AA	AA
C 0348	VCKYCY1CF224Z	S.C.CAP 0.22UF 16V TAPED	S AA	AA
C 0349	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0350	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0351	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0352	VCYFA1HA334J	POL FILM C 330NF 5% 50V	S AA	AA
C 0353	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0354	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0355	VCEA0A0JW227M	E CAPACITOR 220UF/6.3V-5X11	S AA	AA
C 0356	VCCCCY1HH101J	POL FILM C 330NF 5% 50V	S AA	AA
C 0357	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0358	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0360	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0362	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 0363	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0364	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0365	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0366	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0367	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0368	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0369	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0370	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0371	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0372	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0373	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0374	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0375	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0376	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0401	VCKYPA1HB103K	CERAMIC CAPACITOR 10NF10% 50V	S AA	AA
C 0402	VCYFA1HA684J	POL FILM C 680NF 5% 50V	S AA	AB
C 0406	VCYFA1HA684J	POL FILM C 680NF 5% 50V	S AA	AB
C 0410	VCYFA1HA684J	POL FILM C 680NF 5% 50V	S AA	AB
C 0428	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0429	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0430	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 0501	VCKYPA1HB391K	CERAM C 390PF 10% 50V	S AA	AA
C 0502	VCEA0A1VW227M	ELEC C 220UF 20% 35V	S AA	AA
C 0505	VCKYPA1HB391K	CERAM C 390PF 10% 50V	S AA	AA
C 0506	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S AA	AA
C 0507	VCEA0A1VW106M	ELEC C 10UF 20% 35V	S AA	AA
C 0508	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S AA	AA
C 0509	VCEA0A1EW477M	ELEC C 470UF 20% 25V	S AA	AB
C 0510	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0511	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0512	VCEA0A1EW477M	ELEC C 470UF 20% 25V	S AA	AB
C 0513	VCEA0A1VW107M	ELEC C 100UF 35V	S AA	AA
C 0514	VCKYPA1HB472K	CERAM C 470PF 10% 50V	S AA	AA
C 0515	VCKYPA1HB472K	CERAM C 4.7NF 10% 50V	S AA	AA
C 0516	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0517	VCYFA1HA224J	PP FILM C 220NF 5% 50V	S AA	AA
C 0518	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0519	VCKYPA1HB561K	CERAM C 560PF 10% 50V	S AA	AA
C 0520	VCYFAH2AA474K	PP FILM C 470NF 10% 100V	S AA	AD

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
C 0521	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA
C 0526	VCQYTA1HM683J	POL FILM C 68NF 5% 50V	S AA	AB
C 0527	VCQYTA1HM683J	POL FILM C 68NF 5% 50V	S AA	AB
C 0601	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 0602	VCKYPA2HB561K	C CERAM 560PF 10% 500V	S AA	AA
C 0603	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S AA	AA
C 0604	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S AA	AC
C 0605	VCKYPA1HB472K	CERAM C 4.7NF 10% 50V	S AA	AA
C 0606	RC-K20033CEZZ	CERAM C 150PF 2KV MURATA	S AA	AB
C 0607	VCYFAA2EA104J	POL FILM C 100NF 5% 250V	S AA	AC
C 0608	VCYFAA2EA104J	PP FILM C 390NF 5% 250V	S AB	AE
C 0609	VCYFAA2EA104J	PP FILM C 8.2NF 3% 1.8KV	S AA	AC
C 0610	VCYFAA2EA104J	PP FILM C 8.1NF 3% 1.8KV	S AA	AC
C 0611	VCYFAA2EA104J	POL FILM C 33NF 5% 630V	S AA	AC
C 0615	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S AA	AA
C 0616	VCEA0A2EW106M	ELEC C 10UF 20% 250V	S AA	AB
C 0617	RC-F20377CEZZ	PP FILM C 4.7uf 63V	S AB	AE
C 0618	VCKYPA2HB102K	CERAM C 1NF 10% 500V	S AA	AA
C 0619	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S AA	AA
C 0620	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S AA	AC
C 0621	VCEA0A1VW107M	ELEC C 100UF 35V	S AA	AA
C 0622	VCYFAA2EA104J	PP FILM C 220NF 5% 200V	S AA	AB
C 0701	RC-K20029CEZZ	CERAM C 10NF 80.20% 250V	S AC	AC
C 0702	RC-K20029CEZZ	CERAM C 10NF 80.20% 250V	S AC	AC
C 0704	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 0705	VCEA0A1EW226M	ELEC C 22UF 20% 25V	S AA	AA
C 0706	VCQYTA1HM473J	FILM POL C 47NF 5% 50V	S AA	AA
C 0707	RC-K20029CEZZ	CERAM C 10NF 80.20% 250V	S AC	AC
C 0708	VCKYPA1HF103Z	C.CAPACITOR 0.01UF-50V	S AA	AA
C 0709	RC-K20029CEZZ	CERAM C 470PF 2KV MURATA	S AA	AB
C 0710	VCYFAA2EA104J	PP FILM C 8.2NF 3% 1.6KV	S AA	AD
C 0712	RC-K20033CEZZ	CERAM C 470PF 2KV	S AA	AB
C 0713	VCYFAA2EA104J	POL FILM C 33NF 10% 630V	S AA	AB
C 0714	VCEA0A1HW226M	ELEC C 22UF 20% 50V	S AA	AA
C 0715	RC-EZ0119B8MZZ	C ELEC 220uf 385V B43303-H227-M SIEMENS	S AF	AR
△ C 0716	RC-K200106GEZZ	CERAM C DE1410 E332M-KX	S AB	AC
C 0717	RC-K20038CEZZ	CERAM C 470PF 2KV	S AA	AB
C 0718	RC-K20038CEZZ	CERAM C 470PF 2KV	S AA	AB
C 0751	VCEA0A2AW105M	ELEC C 1UF 20% 100V	S AA	AA
C 0752	VCEA0A1CW108M	ELEC C 1000MF 16V 10X16MM	S AA	AB
C 0753	VCQYTA1HM273J	F. CAPACITOR 0.027 U-F	S AA	AA
C 0754	RC-EZA035WJZZ	ELEC C 100UF 200V LOW INPEDANCE	S AB	AF
C 0755	RC-EZA035WJZZ	ELEC C 100UF 200V LOW INPEDANCE	S AB	AF
C 0756	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S AA	AC
C 0757	VCEA0A1EW108M	ELEC C 1000UF 20% 25V	S AA	AC
C 0758	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0760	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 0764	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 0766	VCEA0A1EW476M	ELEC C 47UF 20% 25V	S AA	AA
C 0767	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA
C 0768	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 0769	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S AA	AA
C 0771	VCEA0A1EW476M	ELEC C 47UF 20% 25V	S AA	AA
C 0772	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 0773	VCEA0A1HW105M	ELEC C 1UF 20% 50V	S AA	AA
C 0774	VCEA0A1HW105M	E CAPACITOR 1UF 50V NP	S AA	AA
C 0775	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S AA	AA
C 0780	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S AA	AA
C 1001	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1002	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA
C 1003	VCEA0A1CW106M	ELEC C 10UF 20% 16V	S AA	AA
C 1004	VCEA0A1CW227M	E CAPACITOR 220UF 16V 6.3x11	S AA	AB
C 1005	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1006	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1007	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S AA	AA
C 1008	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1009	VCKYCY1EF473Z	C CAPACITOR 0.047UF/25V TAPED	S AA	AA
C 1010	VCEA0A1HW106M	ELEC C 10UF 20% 50V	S AA	AA
C 1011	VCKYCY1HB271K	GRM39B 271K 50 (1608)SMD CAPACITOR	S AA	AA
C 1012	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S AA	AA
C 1013	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S AA	AA
C 1014	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 1015	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 1016	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA
C 1017	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1018	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA
C 1019	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S AA	AA
C 1020	VCEA0A0JW477M	E CAPACITOR 470UF/6.3V 3X11	S AA	AA
C 1021	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE	REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
C 1022	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0211	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
C 1023	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA	R 0212	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1024	VCEA0A0JW477M	ELEC C 470UF 20% 6.3V	S AA	AA	R 0213	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1025	VCKYCY1HB222K	S CHIP CAPACITOR 0.0022UF/50V TAPED	S AA	AA	R 0214	VRS-CY1JF681J	S. CHIP RES. 680-OHM TAPED	S AA	AA
C 1026	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0215	VRS-CY1JF331J	S CHIP RES TAPE 330 OHM	S AA	AA
C 1027	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0216	VRD-RA2HD330J	RES 33 OHM 5% 1/2W	S AA	AA
C 1029	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA	R 0217	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S AA	AA
C 1030	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA	R 0218	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S AA	AA
C 1031	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0219	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S AA	AA
C 1032	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA	R 0220	VRS-CY1JF684J	S. CHIP RES. 680K-OHM TAPED	S AA	AA
C 1034	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0221	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S AA	AA
C 1035	VCEA0A1CW477M	ELEC C 470UF 20% 16V	S AA	AA	R 0222	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1036	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0223	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S AA	AA
C 1037	VCEA0A1HW335M	ELEC C 3.3UF 20% 50V	S AA	AA	R 0224	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S AA	AA
C 1038	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S AA	AA	R 0237	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
C 1039	VCCCCY1HH3R0C	S C CAPACITOR (TAPED)	S AA	AA	R 0238	VRS-CY1JF392J	S. CHIP RES. 3.9K-OHM TAPED	S AA	AA
C 1040	VCCCCY1HH5R0C	S. CAPACITOR TAPED	S AA	AA	R 0239	VRS-CY1JF331J	S CHIP RES TAPE 330 OHM	S AA	AA
C 1041	VCKYCY1CF474Z	GRM39F 474Z 16 (1608)SMD CAPACITOR	S AA	AA	R 0240	VRS-CY1JF151J	S CHIP RES. 150-OHM TAPED	S AA	AA
C 1042	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0241	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
C 1043	VCYFA1HA684J	POL FILM C 680NF 5% 50V	S AA	AB	R 0243	VRD-RA2BE223J	RES 22KOHM 5% 1/8W	S AA	AA
C 1044	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0246	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
C 1045	VCE9EA1CW106M	E CAPACITOR 10UF 16V NP	S AA	AA	R 0247	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
C 1047	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0248	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
C 1048	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0301	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
C 1049	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA	R 0302	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S AA	AA
C 1050	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0303	VRS-TQ2B220J	OX RE 22 OHM 5% 1/8W SMD	S AA	AA
C 1057	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA	R 0304	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
C 1058	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0305	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
C 1059	VCEA0A1AW477M	E.CAPACITOR 470UF 10V 6.3x11	S AA	AA	R 0306	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S AA	AA
C 1060	VCKYCY1HB103K	GRM39B 103K 50 (1608)SMD CAPACITOR	S AA	AA	R 0307	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
C 1061	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S AA	AA	R 0308	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
C 1065	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S AA	AA	R 0309	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1067	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA	R 0310	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1068	VCKYTV1HF103Z	CERAM C 10NF 50V 2125SMD	S AA	AA	R 0311	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1301	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA	R 0312	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
C 1302	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S AA	AA	R 0313	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1303	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0314	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
C 1304	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0315	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1305	VCKYCY1HB561K	S. CAPACITOR 560PF/50V	S AA	AA	R 0316	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1306	VCKYCY1HB472K	S.CHIP CAP 4700PF/50V T	S AA	AA	R 0317	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1307	VCYFA1HA474J	FILM CAPACITOR 474 MAT	S AA	AB	R 0318	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1308	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0319	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1309	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S AA	AA	R 0320	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1310	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0321	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
C 1311	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA	R 0322	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1312	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S AA	AA	R 0323	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1313	VCEA0A1HW475M	ELEC C 4.7UF 20% 50V	S AA	AA	R 0324	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
C 1314	VCEA0A0JW337M	ELEC C 330UF 20% 6.3V	S AA	AA	R 0325	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1315	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0326	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1320	VCCCCY1HH101J	S. CHIP CAP 100PF/50V TAPED	S AA	AA	R 0330	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1321	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S AA	AA	R 0331	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1322	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0332	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1323	VCEA0A1HW105M	ELEC C 1UF 20% 50V	S AA	AA	R 0333	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1324	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0335	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1325	VCKYCY1HB561K	S. CAPACITOR 560PF/50V	S AA	AA	R 0336	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
C 1326	VCYFA1HA474J	FILM CAPACITOR 474 MAT	S AA	AB	R 0337	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1327	VCKYCY1HB472K	S.CHIP CAP 4700PF/50V T	S AA	AA	R 0338	VRS-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
C 1328	VCKYCY1EF104Z	S CHIP TAPE CAP 0.1UF/25V	S AA	AA	R 0340	VRD-RA2HD151J	RES 150 OHM 5% 1/2W	S AA	AA
C 1329	VCEA0A1EW227M	ELEC C 220UF 20% 25V	S AA	AA	R 0341	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S AA	AA
C 1330	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0342	VRD-RA2HD151J	RES 150 OHM 5% 1/2W	S AA	AA
C 1331	VCEA0A1HW475M	ELEC C 4.7UF 20% 50V	S AA	AA	R 0343	VRS-CY1JF272J	S. CHIP RES. 2.7K-OHM TAPED	S AA	AA
C 1332	VCKYCY1HB102K	S. CHIP CAP 0.001UF/50V	S AA	AA	R 0344	VRS-CY1JF102J	S. CHIP RES TAPE 1K OHM	S AA	AA
C 1333	VCKYCY1CF334Z	S. CHIP CAP. 0.33UF/16V TAPED	S AA	AA	R 0345	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
C 1334	VCKYTV1HF104Z	CERAM C 100NF 50V 2125SMD	S AA	AA	R 0346	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
C 1335	VCKYCY1HF103Z	CHIP CAP 0.01UF/50V	S AA	AA	R 0347	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
RESISTORS					R 0348	VRS-VV3AB271J	MET OX RES 270 OHM 5% 1W	S AA	AA
R 0007	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA	R 0349	VRS-VV3AB271J	MET OX RES 270 OHM 5% 1W	S AA	AA
R 0012	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA	R 0350	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S AA	AA
R 0201	VRD-RA2BE123J	RES 12KOHM 5% 1/8W	S AA	AA	R 0351	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S AA	AA
R 0202	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA	R 0352	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S AA	AA
R 0203	VRS-CY1JF681J	S. CHIP RES. 680-OHM TAPED	S AA	AA	R 0353	VRS-CY1JF561J	S. CHIP RES 560-OHM TAPED	S AA	AA
R 0204	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S AA	AA	R 0354	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 0205	VRS-CY1JF823J	S. CHIP RES. 82K-OHM TAPED	S AA	AA	R 0355	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 0206	VRD-RA2BE271J	RES 270 OHM 5% 1/8W	S AA	AA	R 0356	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0207	VRD-RA2BE271J	RES 270 OHM 5% 1/8W	S AA	AA	R 0357	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 0208	VRD-RA2BE123J	RES 12KOHM 5% 1/8W	S AA	AA	R 0358	VRS-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 0209	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S AA	AA	R 0359	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 0210	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA	R 0370	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
					R 0401	VRS-CY1JF223J	S.CHOP REG 22K-OHM T	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
R 0402	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S AA	AA
R 0403	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0404	VRS-TQ2BD750J	OX RE 75 OHM 5% 1/8W SMD	S AA	AA
R 0405	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0406	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0407	VRS-TV1JD820J	2125 82 OHM 5% 1/10W SMD	S AA	AA
R 0408	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0409	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0410	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0411	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0412	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0413	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0414	VRS-TQ2BD680J	OX RE 68 OHM 5% 1/8W SMD	S AA	AA
R 0415	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0416	VRS-CY1JF223J	S.CHIP RES 22K-OHM T	S AA	AA
R 0417	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S AA	AA
R 0420	VRS-CY1JF223J	S.CHIP RES 22K-OHM T	S AA	AA
R 0421	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S AA	AA
R 0422	VRS-TQ2BD750J	OX RE 75 OHM 5% 1/8W SMD	S AA	AA
R 0423	VRS-TV1JD750J	2125 75 OHM 5% 1/10W SMD	S AA	AA
R 0424	VRD-RA2EE220J	RES 22 OHM 5% 1/4W	S AA	AA
R 0425	VRD-RA2EE220J	RES 22 OHM 5% 1/4W	S AA	AA
R 0426	VRD-RA2EE220J	RES 22 OHM 5% 1/4W	S AA	AA
R 0428	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 0429	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 0430	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 0501	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 0503	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0504	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 0506	VRS-CY1JF124J	S. CHIP RES. 120K-OHM (TAPED)	S AA	AA
R 0509	VRN-GA2EB1R0J	MET FILM R 1 OHM 5% 1/4W	S AA	AA
R 0510	VRS-CY1JF224J	S. CHIP RES. 220K-OHM TAPED	S AA	AA
R 0511	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S AA	AA
R 0512	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0513	VRS-CY1JF685J	RES 0603 6,8MOHM 5% 1/10W SMD	S AA	AA
R 0514	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0515	VRS-CY1JF392J	S. CHIP RES. 3.9K-OHM TAPED	S AA	AA
R 0516	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 0517	VRS-CY1JF392J	S. CHIP RES. 3.9K-OHM TAPED	S AA	AA
R 0518	VRD-RA2BE472J	RES 4,7KOHM 5% 1/8W	S AA	AA
R 0519	VRS-CY1JF124J	S. CHIP RES. 120K-OHM (TAPED)	S AA	AA
R 0520	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
△ R 0521	VRG-RL2HB151J	FUS RES 150 OHM 5% 1/2W	S AA	AB
R 0522	VRD-RA2HD102J	RES 1KOHM 5% 1/2W	S AA	AA
R 0523	VRN-VV3AB1R0J	MET FILM R 1 OHM 5% 1W	S AA	AA
R 0524	VRS-VV3DB151J	MET OX RES 150 OHM 5% 2W	S AA	AA
R 0525	VRS-VV3DB221J	MET FILM R 220 OHM 5% 2W	S AA	AB
R 0526	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0527	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0601	VRD-RA2BE151J	RES 150 OHM 5% 1/8W	S AA	AA
R 0602	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 0604	VRS-KA3HG272J	MET OX RES 2,7KOHM 5% 5W	S AA	AC
R 0605	VRS-VV3AB562J	MET OX RES 5,6KOHM 5% 1W	S AA	AA
R 0606	VRW-KQ3NC3R3K	WOUND RES 3,3 OHM 10% 7W	S AA	AD
R 0607	VRD-RA2HD150J	RES 15 OHM 5% 1/2W	S AA	AA
R 0608	VRN-VV3ABR22J	MET FILM R 22 OHM 5% 1W	S AB	AA
R 0609	VRN-VV3AB5R6J	MET FILM R 5.6 OHM 5% 1W	S AA	AA
R 0610	VRS-KT3LB122J	MET OX RES 1,2KOHM 5% 3W	S AA	AD
R 0611	VRS-VV3AB103J	MET OX RES 10KOHM 5% 1W	S AA	AA
R 0612	VRN-GA2EB1R0J	MET FILM R 1 OHM 5% 1/4W	S AA	AA
R 0614	VRN-SV2HCR22J	MET FILM R 0,22 OHM 5% 1/2W	S AA	AA
R 0616	VRN-VV3DBR82J	MET FILM R .82 OHM 5% 2W	S AA	AA
R 0617	VRN-VV3LB5R6J	MET FILM R 5.6 OHM 5% 3W	S AA	AC
R 0618	VRS-VV3DB473J	MET OX RES 47KOHM 5% 2W	S AB	AB
R 0621	VRD-RA2HD182J	RES 1,8KOHM 5% 1/2W	S AA	AA
R 0622	VRD-RA2HD392J	RES 3,9KOHM 5% 1/2W	S AA	AA
R 0623	VRD-RA2BE472J	RES 4,7KOHM 5% 1/8W	S AA	AA
R 0624	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 0625	VRD-RA2HD822J	RES 8,2KOHM 5% 1/2W	S AA	AA
R 0626	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0627	VRD-RA2EE124J	RES 120KOHM 5% 1/4W	S AA	AA
R 0703	VRD-RA2HD154J	RES 150KOHM 5% 1/2W	S AA	AA
R 0706	VRS-CY1JF124J	S. CHIP RES. 120K-OHM (TAPED)	S AA	AA
R 0707	VRD-RA2HD154J	RES 150KOHM 5% 1/2W	S AA	AA
R 0708	VRD-RA2HD270J	RES 27 OHM 5% 1/2W	S AA	AA
R 0709	VRS-CY1JF184J	CHIP RESISTOR 180K	S AA	AA
R 0710	VRD-RA2BE155J	RES 1,5MOHM 5% 1/8W	S AA	AA
R 0711	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0712	VRD-RA2HD102J	RES 1KOHM 5% 1/2W	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
R 0713	VRD-RA2BE333J	RES 33KOHM 5% 1/8W	S AA	AA
R 0714	VRD-RA2BE155J	RES 1,5MOHM 5% 1/8W	S AA	AA
R 0715	VRN-VV3DBR12J	MET FILM R 0,12 OHM 5% 2W	S AA	AA
R 0716	VRD-RA2HD122J	RES 1,2KOHM 5% 1/2W	S AA	AA
R 0717	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0718	VRW-KQ3HC5R6K	WOUND RES	S AA	AB
R 0719	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0720	VRD-RA2HD103J	RES 10KOHM 5% 1/2W	S AA	AA
R 0721	VRD-RA2HD102J	RES 1KOHM 5% 1/2W	S AA	AA
R 0722	VRS-KT3LB473J	MET OX RES 47KOHM 5% 3W	S AA	AD
R 0723	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 0724	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S AA	AA
R 0725	VRD-RA2HD272J	RES 2,7KOHM 5% 1/2W	S AA	AA
△ R 0727	RR-HZA001WJZZ	R HIGH VOL 8M2 0,5W BC VR37 232224223825	S AA	AB
△ R 0728	RR-HZA001WJZZ	R HIGH VOL 8M2 0,5W BC VR37 232224223825	S AA	AB
R 0742	VRD-RA2HD470J	RES 47 OHM 5% 1/2W	S AA	AA
R 0743	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 0744	VRD-RA2EE102J	RES 1KOHM 5% 1/4W	S AA	AA
R 0746	VRS-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 0747	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 0748	VRS-CY1JF334J	S. CHIP RES. 330K-OHM TAPED	S AA	AA
R 0749	VRS-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 0750	VRS-TQ2BD124F	RE OX 120KOHM 1% 1/8W SMD	S AA	AA
R 0751	VRS-TQ2BD124F	RE OX 120KOHM 1% 1/8W SMD	S AA	AA
R 0752	VRS-TQ2BD472F	OX RE 470 OHM 1% 1/8W SMD	S AA	AA
R 0753	VRS-CY1JF393J	S.CHIP RES 39K-OHM T	S AA	AA
R 0754	VRS-CY1JF183J	S. CHIP RES. 18K-OHM TAPED	S AA	AA
R 0755	VRS-CY1JF562J	S. CHIP RES. 5.6K-OHM TAPED	S AA	AA
R 0756	VRS-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 0757	VRS-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S AA	AA
R 0758	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0759	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 0761	VRS-CY1JF122J	S. RESISTOR 1.2K OHM	S AA	AA
R 0762	VRD-RA2EE680J	RES 68 OHM 5% 1/4W	S AA	AA
R 0763	VRD-RA2HD102J	RES 1KOHM 5% 1/2W	S AA	AA
R 0764	VRS-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S AA	AA
R 0765	VRS-CY1JF182J	S. CHIP RES 1.8K-OHM TAPED	S AA	AA
R 0766	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 0767	VRS-CY1JF682J	S. CHIP RES. 6.8 K OHM TAPED	S AA	AA
R 0768	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0769	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0770	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0771	VRD-RA2BE153J	RES 15KOHM 5% 1/8W	S AA	AA
R 0774	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0775	VRS-VV3DB220J	MET OX RES 22 OHM 5% 2W	S AA	AA
R 0776	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0778	VRS-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S AA	AA
R 0781	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 0783	VRS-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 0785	VRS-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 0791	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 0792	VRD-RA2HD101J	RES 100 OHM 5% 1/2W	S AA	AA
R 0793	VRS-CY1JF563J	S. CHIP RES 560 OHM TAPED	S AA	AA
R 0794	VRS-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 0795	VRS-CY1JF393J	S.CHIP RES 39K-OHM T	S AA	AA
R 1001	VRS-CY1JF100J	S. CHIP RESISTOR 10 OHM	S AA	AA
R 1003	VRS-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1004	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1005	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 1006	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 1007	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1008	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1009	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 1010	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1011	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1012	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1013	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1014	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1015	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1016	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1017	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1018	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1019	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1020	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1021	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1022	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1023	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1024	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1025	VRS-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
R 1026	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1027	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1028	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1029	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1030	VR5-CY1JF221J	S. CHIP RES. 220-OHM TAPED	S AA	AA
R 1031	VR5-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S AA	AA
R 1032	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 1033	VR5-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 1034	VR5-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S AA	AA
R 1035	VR5-CY1JF332J	S. CHIP RES. 3.3K-OHM TAPED	S AA	AA
R 1036	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1037	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1038	VR5-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 1039	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1040	VRD-RA2BE332J	RES 3.3KOHM 5% 1/8W	S AA	AA
R 1041	VR5-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 1043	VRD-RA2BE680J	RES 68 OHM 5% 1/8W	S AA	AA
R 1044	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1045	VR5-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 1046	VRD-RA2BE472J	RES 4.7KOHM 5% 1/8W	S AA	AA
R 1047	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1049	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 1050	VR5-CY1JF225J	S. CHIP RES. 2.2M OHM TAPED	S AA	AA
R 1052	VR5-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 1053	VR5-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 1054	VR5-CY1JF122J	S. RESISTOR 1.2K OHM	S AA	AA
R 1055	VR5-CY1JF271J	S.CHIP RESIS. 270OHM TAPED	S AA	AA
R 1056	VR5-CY1JF222J	S. CHIP RES. 2.2K-OHM TAPED	S AA	AA
R 1057	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1058	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1059	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1060	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 1061	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 1062	VR5-CY1JF100J	S.CHIP RESISTOR 10 OHM	S AA	AA
R 1063	VR5-CY1JF100J	S.CHIP RESISTOR 10 OHM	S AA	AA
R 1065	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1067	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1068	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1069	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1070	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1071	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1072	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1073	VR5-CY1JF473J	S. CHIP RES 47K-OHM TAPED	S AA	AA
R 1074	VR5-CY1JF393J	S.CHIP REG 39K-OHM T	S AA	AA
R 1076	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1077	VR5-CY1JF822J	S. CHIP RES. 8.2K-OHM TAPED	S AA	AA
R 1078	VR5-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA
R 1081	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1082	VR5-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 1083	VR5-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 1085	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S AA	AA
R 1087	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1088	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1089	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 1090	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1091	VR5-CY1JF101J	S. CHIP RES. 100-OHM TAPED	S AA	AA
R 1092	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1093	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1094	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
R 1301	VR5-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 1302	VR5-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 1303	VR5-CY1JF333J	S. CHIP RES. 33K-OHM TAPED	S AA	AA
R 1304	VR5-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 1305	VRD-RA2BE123J	RES 12KOHM 5% 1/8W	S AA	AA
R 1306	VR5-CY1JF151J	S. CHIP RES. 150-OHM TAPED	S AA	AA
R 1307	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S AA	AA
R 1308	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1309	VR5-CY1JF123J	S. CHIP RES. 12K-OHM TAPED	S AA	AA
R 1310	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1311	VR5-CY1JF103J	S.C. RESISTOR 10K OHM	S AA	AA
R 1312	VR5-CY1JF472J	S. RES. 4.7K OHM TAPED	S AA	AA
R 1313	VR5-CY1JF104J	S. CHIP RES. 100K-OHM TAPED	S AA	AA
R 1314	VR5-CY1JF151J	S. CHIP RES. 150-OHM TAPED	S AA	AA
R 1315	VR5-CY1JF333J	S. CHIP RES. 33K-OHM TAPED	S AA	AA
R 1316	VR5-CY1JF273J	S. CHIP RES. 27-OHM TAPED	S AA	AA
R 1317	VRD-RA2BE223J	RES 22KOHM 5% 1/8W	S AA	AA
R 1318	VR5-CY1JF223J	S.CHOP REG 22K-OHM T	S AA	AA
R 1319	VRD-RA2BE123J	RES 12KOHM 5% 1/8W	S AA	AA
R 1322	VR5-CY1JF102J	S.CHIP RES TAPE 1K OHM	S AA	AA

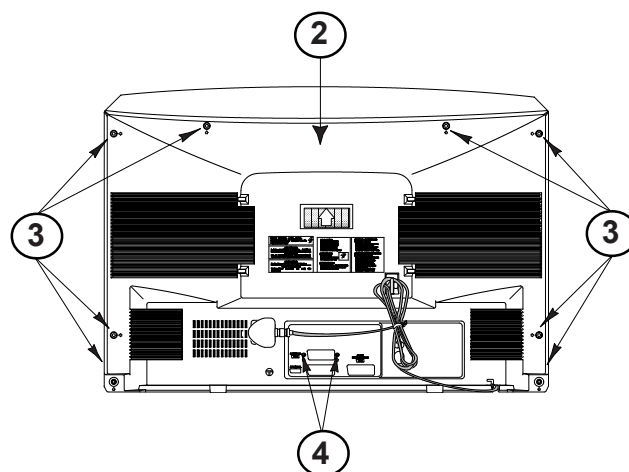
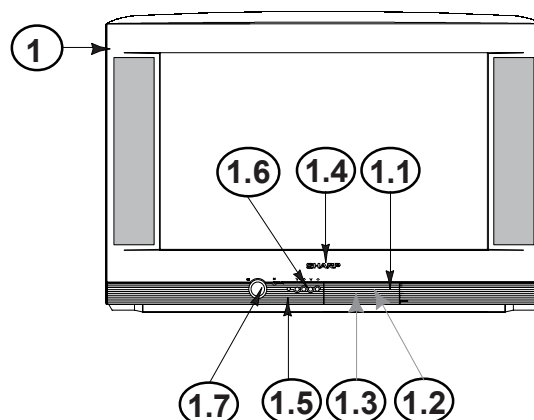
REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
		MISCELLANEOUS PARTS		
	PMLT-1038BM00	SPACER 25X20X15 MM	S AA	AC
	QCNW-A417WJZZ	(PC) WIRE	S AB	AE
	QPWBF8217WJN5	PWB CHASSIS GA-20	S AK	AW
	XTASD30P10000	SCREW	S AA	AA
FB 0303	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0304	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0305	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0401	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0402	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0404	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0405	RBLN-0039TAZZ	FERRITE BLM21AJ401SN1D MURATA	S AA	AB
FB 0407	RBLN-0039TAZZ	FERRITE BLM21AJ401SN1D MURATA	S AA	AB
FB 0501	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0502	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 0601	RBLN-0047CEZZ	FERRITE FBA04VB900BB-00-A TAIYO	S AA	AA
FB 0602	RBLN-0047CEZZ	FERRITE FBA04VB900BB-00-A TAIYO	S AA	AA
FB 0603	RBLN-0020CEZZ	BALUNE	S AA	AB
FB 0701	RBLN-0036CEZZ	BALUN	S AA	AA
FB 0751	RBLN-0036CEZZ	BALUN	S AA	AA
FB 1001	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 1006	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 1007	RBLN-0020CEZZ	BALUNE	S AA	AB
P 0601	QPLGN0560CEZZ	CONNECTOR 5 PIN TV-50P-05-V2 A TAIKO	S AA	AC
P 0602	QPLGN0741CEZZ	PLUG	S AA	AA
P 0603	QTIPM0017CEFM	TIP	S AA	AA
P 0702	QPLGN0260CEZZ	CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO	S AA	AA
P 0703	QPLGN0360CEZZ	CONNECTOR 3 PIN TV-50P-03-V2 A TAIKO	S AA	AA
P 1002	QPLGN0841CEZZ	PLUG	S AA	AA
P 1003	QPLGN0341CEZZ	PLUG	S AA	AA
P 1004	QPLGN0941CEZZ	PLUG	S AA	AB
P 1005	QPLGN0341CEZZ	PLUG	S AA	AA
P 1006	QPLGN0341CEZZ	PLUG	S AA	AA
P 1301	QPLGN0441CEZZ	PLUG 4PIN	S AA	AA
PR 0701	RMPTP0001BMZZ	PTC B59250-C1080-B70	S AA	AD
RJ 0002	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0003	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0004	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0005	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0006	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0008	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0009	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0010	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0011	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0012	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0013	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0014	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RJ 0015	VR5-CY1JF000J	S. CHIP RES. 0-OHM TAPED	S AA	AA
RY 0701	RRLYJ0090CEZZ	RELE G5PA-1.8 DV12V-A OMRON	S AB	AF
SC 0301	QSOCZ2112BMZZ	TWIN SCART CHASSIS GA-10	S AD	AL
SC 0302	QSOCZ2107BMZZ	SOCKET	S AF	AE
SC 1001	QSOCZ0115SC32	SOCKET IC 32 PIN	S AA	AB
	LHLDW1019CEZZ	HOLDER CRDAR1540BMV7	S AA	AB
	XTASD40P10000	SCREW CRDAR1540BMV7	S AA	AA
PWB-B		CRT UNIT		
		INTEGRATED CIRCUITS		
IC 0850	RH-IX1833BMZZ	IC TDA6109 VIDEO AMPLIFIER 100Hz	S AF	AR
		TRANSISTORS		
Q 0851	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 0852	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0853	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0854	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 0855	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0856	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0857	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 0858	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0859	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 0860	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 1504	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 1505	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 1506	VS2SA1837//1	TRT A1837 TOSHIBA	S AB	AE
Q 1507	VS2SC4793//1	TRT C4793 TOSHIBA	S AB	AE
Q 1508	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 1509	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 1510	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
		DIODES		
D 0850	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S AA	AA
D 0851	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S AA	AA
D 0852	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S AA	AA
D 0853	RH-EX0619GEZZ	ZENER DIODE 6.2V B3	S AA	AA
D 0854	RH-EX0408BMZZ	ZENER DIODE BZX79C5V1	S AB	AB
D 0863	RH-DX0570BMZZ	DIODE 1N4004 ACPA	S AA	AA
D 1502	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 1503	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 1506	RH-DX0487CEZZ	DIODE 1SR153-400T-31-A ROHM	S AA	AB
D 1507	RH-DX0487CEZZ	DIODE 1SR153-400T-31-A ROHM	S AA	AB
D 1508	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 1515	RH-EX0416BMZZ	ZENER DIODE BZX79C11V	S AA	AB
D 1518	RH-EX0416BMZZ	ZENER DIODE BZX79C11V	S AA	AB
		CAPACITORS		
C 0850	VCFYAA2EA104J	POL FILM C 100NF 5% 250V	S AA	AC
C 0851	RC-KZ018JCEZZ	CERAM C 10NF 250V TDK	S AA	AB
C 0855	VCEA0A2EW476M	ELEC C 47UF 20% 250V	S AA	AD
C 0865	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0866	VCQYTA1HM104K	POL FILM C 100NF 10% 50V	S AA	AA
C 0868	VCEA0A2EW106M	ELEC C 10UF 20% 250V	S AA	AB
C 0869	VCFYAA2EA333K	POL FILM C 33NF 10% 250V	S AC	AE
C 0871	VCFYAA2EA104J	POL FILM C 100NF 5% 250V	S AA	AC
C 1501	VCEA0A1CW477M	ELEC C 470UF 20% 16V	S AA	AA
C 1504	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA
C 1506	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA
C 1508	VCKYPA2HB472K	CERAM C 4,7NF 10% 500V	S AA	AB
C 1509	VCKYPA2HB472K	CERAM C 4,7NF 10% 500V	S AA	AB
C 1511	VCKYPA1HF103Z	C.CAPACITOR 0.01U-F 50V	S AA	AA
C 1515	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 1516	VCEA0A1CW476M	ELEC C 47UF 20% 16V	S AA	AA
C 1517	VCEA0A2EW106M	ELEC C 10UF 20% 250V	S AA	AB
C 1518	VCCSPA2HL560K	CERAM C 56PF 10% 500V	S AA	AA
C 1519	VCEA0A2EW106M	ELEC C 10UF 20% 250V	S AA	AB
		RESISTORS		
R 0856	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0857	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 0858	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0859	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 0860	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 0861	VRD-RA2BE561J	RES 560 OHM 5% 1/8W	S AA	AA
R 0862	VRC-MA2HG152K	SOLID R 1,5KOHM 10% 1/2W	S AA	AB
R 0863	VRC-MA2HG152K	SOLID R 1,5KOHM 10% 1/2W	S AA	AB
R 0864	VRC-MA2HG152K	SOLID R 1,5KOHM 10% 1/2W	S AA	AB
R 0867	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0868	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 0869	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0870	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 0871	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 0872	VRD-RA2BE561J	RES 560 OHM 5% 1/8W	S AA	AA
R 0873	VRD-RA2HD224J	RES 220KOHM 5% 1/2W	S AA	AA
R 0874	VRD-RA2HD225J	RES 2,2MOHM 5% 1/2W	S AA	AA
R 0876	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 0877	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 0878	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 0879	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 0880	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 0881	VRD-RA2BE561J	RES 560 OHM 5% 1/8W	S AA	AA
R 0882	VRD-RA2BE822J	RES 8,2KOHM 5% 1/8W	S AA	AA
R 0883	VRD-RA2BE182J	RES 1,8KOHM 5% 1/8W	S AA	AA
R 0884	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S AA	AA
R 0885	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
△ R 0886	RR-XZ0216BMZZ	FUS RES 22R TAP 5% 1/2W	S AA	AB
R 1507	VRD-RA2HD391J	RES 390 OHM 5% 1/2W	S AA	AA
R 1508	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 1509	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 1510	VRD-RA2BE331J	RES 330 OHM 5% 1/8W	S AA	AA
R 1511	VRD-RA2BE560J	RES 56 OHM 5% 1/8W	S AA	AA
R 1512	VRD-RA2BE330J	RES 33 OHM 5% 1/8W	S AA	AA
R 1513	VRS-VV3LB152J	MET OX RES 1,5KOHM 5% 3W	S AA	AB
R 1514	VRD-RA2BE100J	RES 10 OHM 5% 1/8W	S AA	AA
R 1515	VRD-RA2BE820J	RES 82 OHM 5% 1/8W	S AA	AA
R 1516	VRD-RA2BE820J	RES 82 OHM 5% 1/8W	S AA	AA
R 1517	VRD-RA2BE122J	RES 1,2KOHM 5% 1/8W	S AA	AA
R 1518	VRD-RA2BE683J	RES 68KOHM 5% 1/8W	S AA	AA
R 1519	VRD-RA2BE123J	RES 12KOHM 5% 1/8W	S AA	AA

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
R 1520	VRD-RA2BE683J	RES 68KOHM 5% 1/8W	S AA	AA
R 1521	VRD-RA2BE122J	RES 1,2KOHM 5% 1/8W	S AA	AA
R 1525	VRD-RA2EE560J	RES 56 OHM 5% 1/4W	S AA	AA
R 1526	VRD-RA2EE560J	RES 56 OHM 5% 1/4W	S AA	AA
R 1527	VRD-RA2EE2R7J	RES 2,7 OHM 5% 1/4W	S AA	AA
R 1528	VRD-RA2EE2R7J	RES 2,7 OHM 5% 1/4W	S AA	AA
R 1529	VRS-VV3DB221J	MET FILM R 220 OHM 5% 2W	S AA	AB
R 1530	VRD-RA2BE122J	RES 1,2KOHM 5% 1/8W	S AA	AA
		MISCELLANEOUS PARTS		
	QCNW-A327WJZZ	WIRE (H) 7 WAYS	S AA	AD
	QCNW-A328WJZZ	WIRE (K) 8 WAYS	S AB	AD
	QCNW-A423WJZZ	(PU) WIRE	S AA	AE
FB 0850	RBLN-0037CEZZ	BALUN FBA04HA90088-00 T/Y	S AB	AB
FB 1501	RBLN-0020CEZZ	BALUNE	S AA	AB
P 0852	QPLGN0241CEZZ	PLUG	S AA	AA
P 0854	QPLGN0741CEZZ	PLUG	S AA	AA
P 0855	QPLGN0841CEZZ	PLUG	S AA	AA
P 0856	QTIPM0017CEFM	TIP	S AA	AA
P 0858	QTIPM0017CEFM	TIP	S AA	AA
△ SC 0850	GSOCV0103BMZZ	SOCK HPS1521-014408 HOSHI	S AD	AG
	PWB-C	CONTROL UNIT		
		INTEGRATED CIRCUITS		
△ IC 2001	RH-FX0008GEZZ	P/COUPLER RANK-S SHARP	S AA	AD
		TRANSISTORS		
R 2001	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 2002	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S AA	AA
R 2003	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2004	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 2005	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 2006	VRD-RA2BE561J	RES 560 OHM 5% 1/8W	S AA	AA
R 2007	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 2008	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 2009	VRD-RA2BE222J	RES 2,2KOHM 5% 1/8W	S AA	AA
R 2010	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2011	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2012	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2020	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 2021	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S AA	AA
R 2022	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S AA	AA
R 2023	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2024	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2025	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2026	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2027	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2028	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2029	VRD-RA2HD100J	RES 10 OHM 5% 1/2W	S AA	AA
R 2031	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S AA	AA
R 2032	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S AA	AA
R 2035	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2036	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2037	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2038	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2041	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2042	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2043	VRD-RA2BE562J	RES 5,6KOHM 5% 1/8W	S AA	AA
R 2044	VRD-RA2BE182J	RES 1,8KOHM 5% 1/8W	S AA	AA
R 2047	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2048	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
		DIODES		
D 2008	RH-DX0045BMZZ	DIODE 1N4148	S AA	AA
D 2009	RH-DX0571BMZZ	DIODE 1N4005 ACPA	S AA	AA
D 2011	RH-PX0105BMZZ	LED SPB-25M/VW ROHM	S AC	AC
		CAPACITORS		
C 2003	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 2005	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 2007	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 2008	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 2009	VCKYPA1HB102K	C.CAPACITOR 1000PF/50V	S AA	AA
C 2010	VCEA0A1CW107M	ELEC C 100UF 20% 16V	S AA	AA
△ C 2011	RC-FZ0219BMZZ	C 470NF 275V X2 B81130-C1474-M SIEMENS	S AA	AD
C 2012	VCEA0A1CW226M	ELEC C 22UF 20% 16V	S AA	AA
		RESISTORS		

REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
R 2001	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 2002	VRD-RA2BE332J	RES 3,3KOHM 5% 1/8W	S AA	AA
R 2003	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2004	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 2005	VRD-RA2BE391J	RES 390 OHM 5% 1/8W	S AA	AA
R 2006	VRD-RA2BE561J	RES 560 OHM 5% 1/8W	S AA	AA
R 2007	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 2008	VRD-RA2BE102J	RES 1KOHM 5% 1/8W	S AA	AA
R 2009	VRD-RA2BE222J	RES 2,2KOHM 5% 1/8W	S AA	AA
R 2010	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2011	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2012	VRD-RA2BE101J	RES 100 OHM 5% 1/8W	S AA	AA
R 2020	VRD-RA2BE750J	RES 75 OHM 5% 1/8W	S AA	AA
R 2021	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S AA	AA
R 2022	VRD-RA2BE104J	RES 100KOHM 5% 1/8W	S AA	AA
R 2023	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2024	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2025	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2026	VRD-RA2HD473J	RES 47KOHM 5% 1/2W	S AA	AA
R 2027	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2028	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2029	VRD-RA2HD100J	RES 10 OHM 5% 1/2W	S AA	AA
R 2031	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S AA	AA
R 2032	VRD-RA2BE273J	RES 27KOHM 5% 1/8W	S AA	AA
R 2035	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2036	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2037	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2038	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2041	VRD-RA2BE473J	RES 47KOHM 5% 1/8W	S AA	AA
R 2042	VRD-RA2BE103J	RES 10KOHM 5% 1/8W	S AA	AA
R 2043	VRD-RA2BE562J	RES 5,6KOHM 5% 1/8W	S AA	AA
R 2044	VRD-RA2BE182J	RES 1,8KOHM 5% 1/8W	S AA	AA
R 2047	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
R 2048	VRD-RA2BE221J	RES 220 OHM 5% 1/8W	S AA	AA
COILS				
L 2001	VP-XF3R3K0000	PEAK COIL 3.3UH 10% 1/8W	S AA	AB
L 2003	VP-XF3R3K0000	PEAK COIL 3.3UH 10% 1/8W	S AA	AB
L 2004	VP-XF3R3K0000	PEAK COIL 3.3UH 10% 1/8W	S AA	AB
△ L 2005	RCILF0108BMZZ	COIL 472839.00 THOMSON	S AF	AL
MISCELLANEOUS PARTS				
	GCOVA1512BMSA	DECORATION	S AA	AB
	LHLD1527BMZZ	CONNECTION HOLDER	S AC	AG
	LHLDW1019CEZZ	HOLDER	S AA	AB
	QCNW-A329WJZZ	WIRE (PA) 8 VIAS	S AC	AG
	QCNW-A330WJZZ	WIRE (PB) 3 WAYS	S AC	AH
	QCNW-A331WJZZ	WIRE (AA) 2 WAYS	S AB	AE
	QCNW-A418WJZZ	(PD) WIRE	S AB	AE
△ F 2001	QFS-C3229CEZZ	FUSE S506-3.15A-A1 TOKYO COMPONENTS	S AA	AC
FH 0001	QFSDH1001BMZZ	FUSE HOLD.EYF52BC-PANASON	S AA	AA
FH 0002	QFSDH1002BMZZ	FUSE HOLD.EYF52BC-PANASON	S AA	AA
J 2001	QJAKZ0015CEZZ	JACK	S AH	AM
J 2002	QJAKJ0101SEZZ	MINIATURE PHONE JACK MORNING STAR	S AA	AD
P 2001	QPLGN0341CEZZ	PLUG	S AA	AA
P 2002	QPLGN0941CEZZ	PLUG	S AA	AB
P 2003	QPLGN0641CEZZ	PLUG	S AA	AA
P 2005	QPLGN0360CEZZ	CONNECTOR 3 PIN TV-50P-03-V2 A TAIKO	S AA	AA
P 2006	QPLGN0260CEZZ	CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO	S AA	AA
Q 2001	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
Q 2002	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 2003	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 2005	VS2SA1266-Y-1	TRT 2SA1266 KEC	S AA	AA
Q 2006	VS2SC3198-Y-1	TRT 2SC3198(AT) KOREA	S AA	AA
RMC2001	RRMCUA004WJZZ	RECEPTOR MID TSOP1738. VISHAY	S AB	AG
S 2001	QSW-K0079GEZZ	TACTILE SWITCH	S AA	AA
S 2002	QSW-K0079GEZZ	TACTILE SWITCH	S AA	AA
S 2003	QSW-K0079GEZZ	TACTILE SWITCH	S AA	AA
S 2004	QSW-K0079GEZZ	TACTILE SWITCH	S AA	AA
△ S 2005	QSW-P0591CEZZ	SWITCH SDDFC3-A ALPS	S AD	AL
VA 2001	RH-VX0047CEZZ	VARIATOR SIOV-S14K420M4 MATSUSHITA	S AA	AC
MISCELLANEOUS PARTS				
	CSOCN0661BMV0	CABLE SET (F) THOMSON SF CRT	S AC	AH
	LHLDW1009CEZZ	HOLDER	S AA	AA
	LHLDW1033CE00	HOLDER	S AA	AA
	LHLDW1060CEZZ	HOLDER	S AA	AA
	LHLDZ1714BMZZ	HOLDER ANODE CAP	S AA	AA
△	QACCZ2100BMSA	AC CORD	S AH	AR

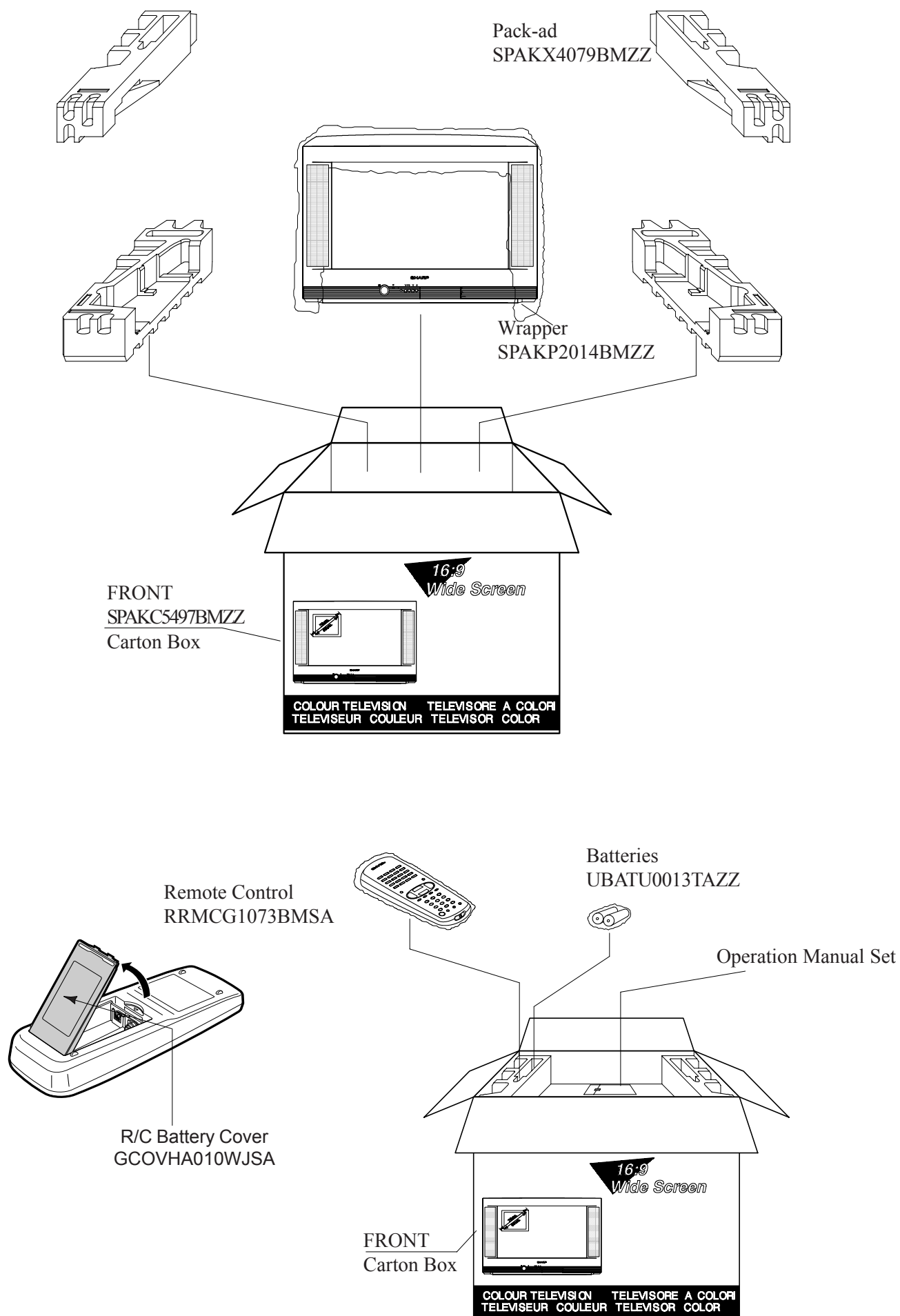
REF No.	PARTS	DESCRIPTION	* SN CODE	EX CODE
	QCNW-2862BMZZ	WIRE SPEAKERS FOR 32" FLAT	S AC	AG
	RRMCG1073BMSA	R/C FLAT 50HZ MODEL HOSHIDEN	S AK	AW
	SPAKP2014BMZZ	CEL-AIR WRAPPER 32"	S AE	AH
	UBATU0013TAZZ	BATTERY R6(X2) TOSHIBA	S AB	AF
	VSP1206PB617A	SPAEAKER 7 OHM 12x6CM SEA TRADE ELECTRON	S AE	AN
	XTASD30P10000	SCREW	S AA	AA
	XTASD40P16000	SCREN	S AA	AA
	SPAKS5497BMZZ	PACK-CASE 32"	S AR	BB
	SPAKX4079BMZZ	CUSHION	S AM	AY
	LCHSM1011BMKA	CHASSIS FRAME V0 DSETUB217BMV4	S AE	AP
	LHLDW1002GEZZ	HOLDER DSETUB217BMV4	S AA	AB
	LHLDW1033CE00	HOLDER DSETUB217BMV4	S AA	AA
	XTASD30P10000	SCREW DSETUB217BMV4	S AA	AA
	TMAN-3661BMN2	SERV. MANUAL / GUARANTEE 32JW73EES	S AA	AC
OWNERS MANUAL				
	TINS-7225BMN0	OWNERS MANUAL	S AF	AR
	TINS-A200WJN0	OWNERS MANUAL 32JW73EES	S AF	AR
	TINS-A201WJN0	OWNERS MANUAL 32JW73ESE	S AL	AW
CABINET PARTS				
△ 1	CCABA1363BMV0	CABINET SET 32HW53H	S AZ	BN
1.1	GDORF1063BMSA	DOOR	S AA	AE
1.2	PKAI-1083BM00	DOOR RATCH	S AC	AF
1.3	HINDP5122BMSA	INDICATOR	S AA	AE
1.4	HBDGB3141CESA	SHARP BADGE	S AB	AG
1.5	HDECQ0067BMSA	DECORATION	S AA	AC
1.6	JBTN-1080BMSA	UP/DOWN BUTTON	S AA	AD
1.7	JBTN-1079BMSA	POWER BUTTON	S AA	AC
△ 2	GCABB1130BMKA	REAR CABINET	S AX	BK
3	XTASB40P20000	SCREW	S AA	AA
4	XTBSB30P13000	SCREW	S AA	AA



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PACKING OF THE SET & ACCESSORIES



Notes:

Notes:

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